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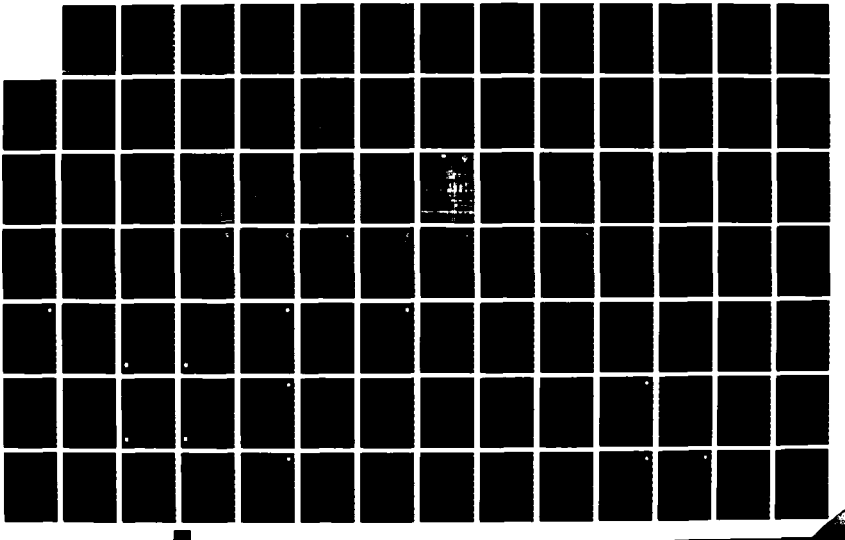

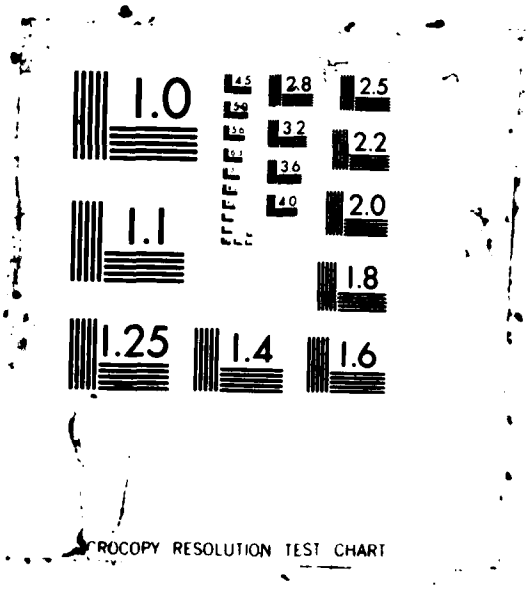
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ROCOPY RESOLUTION TEST CHART

INSTALLATION RESTORATION PROGRAM PHASE II-CONFIRMATION/QUANTIFICATION STAGE 1

VOLUME II-APPENDIX E-K

For

Former Air Force Plant 83 Albuquerque, New Mexico

Prepared By:

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SEPTEMBER 1986

FINAL REPORT FOR PERIOD MARCH 1985 TO SEPTEMBER 1986

Approved for Public Release; Distribution is Unlimited

Prepared For:

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19. ABSTRACT (Continue on reverse if necessary and identify by block number)

In accordance with the procedures developed for the Department of Defense (DOD) Installation Restoration Program (IRP), and the EPA's April 1984 Scope of Work, a Phase II, Stage I site investigation has been performed at the Former USAF Plant No. 83 in Albuquerque, New Mexico. Investigations were conducted at identified hazardous waste storage sites and in other areas of the plant. A total of 12 monitoring wells were installed, seven (7) in the upper water-bearing zone and five (5) in the intermediate aquifer. Boreholes were continuously monitored during drilling with an OVA, with select samples being sent to the laboratory for priority pollutant analysis. Eight (8) samples of the sediment in the San Jose Drain were also obtained for analysis. Two deep wells (DWA-1 and DWA-2) were pumped for 24 hours and water levels measured in several nearby shallow wells in order to evaluate the in-situ permeability of the clay unit. Groundwater samples were obtained from all the wells during this investigation and three existing monitoring wells at the site. (Keywords ...) ~~(continued)~~

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A total of 346 subsurface soil samples were collected during this investigation. These samples were evaluated utilizing the OVA in the screening mode and results reflect total VOCs rather than specific compounds or heavy metals. Of these samples, 36 were selected and sent for laboratory analysis. One sample was broken in transit and could not be submitted for analysis. Several of the soil samples that were chemically analyzed are composites of two or three individual subsurface samples.

Generally, there seems to be extensive soil contamination. Almost every soil sample tested contained some volatile organic compounds and metals at elevated levels. For example, soil samples contained benzene at concentrations exceeding 0.09 ppm in 100% (35/35) of samples and tetrachloroethene at concentrations exceeding 0.07 ppm in 40% (14/35) of samples. Methylene chloride was detected at levels greater than 0.25 ppm in 54% (19/35) of soil samples and 1,4-dichlorobenzene was found at concentraitons equal to or exceeding 0.16 ppm in 17% (6/35) of samples. Chromium was detected at concentrations of 10 ppm in 60% (21/35) of soils samples, while nickel was detected at levels equal to or greater than 10 ppm to 15 ppm in 86% (30/35) and 51% (18/35) of samples, respectively. Lead was detected at concentrations exceeding 5 ppm and 10 ppm in 69% (24/35) and 57% (20/35) of soil samples, respectively. Sediments in the San Jose Drain contain metals and some volatile organic compounds; there seems to be a pattern related to the plant for some contaminants. Groundwater in the upper-water bearing zone contains volatile organic compounds and metals, while groundwater in the intermediate aquifer shows trace levels of a few volatile organic compounds.

Based upon the current understanding of contaminant distribution and site hydrogeology, recommendations regarding further investigation at the plant were developed. The recommendations were organized into two general groups, one set specific to the individuals and another set for further investigations into plant-wide contaminant distribution and hydrogeologic conditions.

APPENDICES E THROUGH K

APPENDIX E

SAMPLING AND ANALYTICAL PROCEDURES

E.1 FIELD SAMPLING METHODS

FIELD ANALYTICAL PROCEDURES AND DATA REPORTING

Chemical Data

- Procedures for Field Measurement of pH. Readings were taken periodically in buffer solutions of the appropriate range at the same temperature during repeated sampling events. The users manual for the pH meter was available to field personnel.

- Procedures for Field Measurement of Electrical Conductivity. When rapid sample changes did not occur, replicate measurements were made. A standard solution of known conductivity was made available for checking precision. Several readings were taken and the arithmetic mean used as the reported value. The users manual for the electrical conductivity meter was available to field personnel.

- Procedures for Field Measurement of Volatile Organics. Approximately 20 mil of soil was placed in VOA vials. The vials were placed in a 50°C hot water bath for 10 minutes. An aliquot of air from the head space within the vial was then withdrawn by syringe for direct injection into the OVA.

Hydraulic Data

- Procedures for Measurements. An M-scope was used to measure to 0.01 foot the water level under static (non-pumping/static) conditions.

- Procedures for Pump Tests. Water from the deep wells was continuously pumped over a twelve hour period and water levels from adjacent shallow wells were simultaneously monitored. If the groundwater pumped during these tests was determined to contain hazardous constituents, it was discharged to the Albuquerque sewer system for treatment.

Soil Boring Data

- Soil Sampling. Continuous split spoon samples were collected at each test boring site. Sample depth was monitored by the subcontractor (driller) under the supervision of the on-site geologist.

- Blow Counts. Soil density was determined by recording the number of blows necessary for the split spoon to penetrate six inches of soil.

SAMPLE NUMBERING SYSTEM

A sample numbering system was used to identify each sample taken during the on-site remedial investigation. The numbering system provides a tracking procedure to allow retrieval of information about a particular site and assure that each sample is uniquely numbered. A listing of sample numbers was maintained by the HART field team leader. Each sample number consisted of five parts as described below.

Project Identification

The designation Former USAF 83 was used to identify the former Former USAF Plant No. 83, now known as General Electric Aircraft Engine Business Group's Albuquerque Plant.

Site Identification

Each sampling site was identified by a three to four letter identifier code, with the following prefix:

DWA - Deep monitoring well with 6 inch casing

DWB - Deep monitoring well with 4 inch casing

SW - Shallow well

(0164G)

SJ - San Jose Drain Sediment Sample

UCV - Underground Cyanide Vault Sample

SV - Previously installed (South Valley) monitoring well

A numerical suffix unique to each prefix follows. A map and surveyors data was used to locate each sampling site.

Sequence Number

A two letter code was used to identify the type of sample collected, such as:

SS - soil sample collected during drilling

SD - sediment sample

GW - groundwater sample

Sample Depth

The depth or depth interval at which the sample was collected is noted on the label.

Split Sampling

Two sets of samples were collected. The labels HART, for Fred C. Hart Associates, and USAF OEHL to indicate the sample that was sent to the USAF OEHL laboratory, were used to differentiate the analyzer of each set.

Examples

Examples of sample numbers are:

AF/GE 83, DWB-1, SS-3, 4'-6', HART 005. Air Force General Electric Former USAF Plant No. 83; 60 foot deep Monitoring Well #1; third soil sample collected between a depth of four and six feet below the surface; retained by HART. Fifth chemical sample selected for analysis.

AF/GE 83, DWB-1, SS-3, 4'-6', EPA 005. Same as previous sample, except it is retained for analysis by EPA-designated laboratory. Also identified as fifth chemical sample split and sent to USAF OEHL or EPA.

AF/GE 83, SJ-2, SD-2, 3', HART. Air Force General Electric Former USAF Plant No. 83; San Jose Drain, second sediment sample collected at a depth of three feet; retained by HART.

AF/GE 83, SW-4, SS-5, 8'-10', HART. Air Force General Electric Former USAF Plant No. 83; Shallow Monitoring Well; fifth sample collected at a depth of 8 to 10 feet; retained by HART.

Blanks, Knowns, Spikes, Splits and Duplicates

QA/QC blank and duplicate samples, sent to the USAF OEHL laboratory and the HART subcontractor, Princeton Testing Laboratories at Princeton, NJ, were given sample numbers similar to those for collected samples except that the sequence number was unique. The identity of QA/QC samples was recorded in field log books, but was not marked in any way on the sample containers.

EPA Samples

Samples sent to the USAF OEHL laboratory were accompanied by the following information:

1. Purpose of sample (analyte).
2. Installation name (base).
3. Sample number (on container).
4. Source/location of sample.
5. Contract task number and title of project.
6. Method of collection (bailer, suction pump, air-lift pump, etc.).
7. Volumes removed before sample taken.
8. Special conditions (use of surrogates, filtering, etc.).
9. Preservatives used, especially nonstandard types.

Soil Sampling

Soil samples were collected during drilling with split-spoon drive samplers of two-inch outside diameter. Decontamination procedures for sampling equipment are described in Chapter 3. Samples were taken continuously (i.e., from two foot intervals the length of the boring) using a two foot long split spoon sampler. All soil samples were logged in general accordance with "Description of Soils (Visual Manual Procedure)", ASTM D2488-69, which is based on the Unified Soil Classification System.

A portion of the soil sample from the least disturbed center of the split spoon was placed in a VOA vial for on-site OVA analysis. The remaining portion of the soil sample was placed in a properly labeled glass jar. The VOA vials were analyzed in the field for the presence of volatile organic compounds and the results recorded. Based on the results, soil samples were selected for submittal to the laboratories for further analysis. Up to four (4) samples per borehole were selected. At a minimum, these consisted of one soil sample from the water table interface and one additional sample from the zone judged to be most contaminated. If no zone of contamination was noted, soil samples were composited.

However, a soil sample was not composited over an interval exceeding 10 feet.

Undisturbed samples for triaxial permeability tests using a Shelby tube sampler were taken if a confining layer was encountered during drilling. Both ends of the retrieved Shelby tube were sealed with wax and no other form of sampling was attempted from the tube to insure the integrity of the undisturbed sample. Also, two samples per borehole were obtained for grain size analysis.

GROUNDWATER MONITORING AND SAMPLING

A total of 16 wells were sampled. This includes the 13 wells installed for this study and the three existing South Valley (SV-8, SV-9, SV-15) monitor wells. All measuring, purging and sampling equipment was decontaminated prior to data collection.

Groundwater Level Measurements

After all well installation was completed, the groundwater levels of all the wells were measured within a 24-hour period. The instrument (M-scope: Slope Indicator Co., Model 51453) was lowered down the well and measured from the top of the PVC casing. When the electrode of the M-scope came into contact with water, an audio signal was emitted. The instrument was also used to sound the bottom of the well. HART trained GE personnel to take additional groundwater levels in the monitor wells that were installed during this investigation. Groundwater levels must be periodically monitored in order to determine groundwater flow directions over time. It is not cost-effective for HART personnel to travel to the site for the limited time period required to take these measurements. GE personnel were trained to perform monthly groundwater level measurements in the wells.

On-Site Analysis

Monitor Well Sampling. In order for valid representative groundwater samples to be collected from the monitor wells, it was very important to properly prepare the well prior to sample collection. This preparation entailed removing all the water which was standing in the casing and grabbing the sample from water which had recently been recharged from the aquifer.

To accomplish this, the depth to water from the top of the well casing was measured. This value was used in conjunction with the total casing length to determine the height of the water column. The volume of water standing in the well was then calculated. Five times this volume was removed by pumping or bailing before the sample was collected. In cases where a well was emptied until dry and was very slow to recover, the volume required for evacuation may have been reduced to two or three standing water volumes.

Once the well was adequately evacuated, sample collection was then accomplished by lowering a stainless steel, bottom loading bailer with a teflon check valve into the well. Each bailer was fitted with a stainless steel wire leader and a new piece of nylon cord. A different precleaned bailer was devoted to each well. If the bailer had not been used for well evacuation, the first 3 bails of water were wasted to rinse any cleaning agents which might still have been present on the bailer. The samples were poured directly from the bailers to sample jars for temperature, pH, and specific conductance.

Temperature. Measurements of the sample temperature were taken using a decontaminated mercury thermometer. The field measurement represents the temperature of the aquifer unit at a particular location and time. Variations in sample temperature enabled interpretation of a temperature gradient which reflects aquifer hydraulics. This measurement was also used to calibrate the pH and conductivity meters in the field.

pH. The pH of each sample was measured with a Corning Model 3 pH Meter. Field measurements of sample pH were used as a relative check of the lab measurements. The pH of a sample tends to change upon contact with air, and stabilizes once the sample becomes fully aerated. Therefore, the pH measurements of aerated samples were used as relative indicators of groundwater contamination.

Specific Conductivity. The specific conductivity of each sample was measured with a Hach Model 17250 Conductivity Meter. Elevated specific conductivities indicate the presence of conductive ions such as chlorides and sulfides in the groundwater. High concentrations of these ions may indicate contamination.

Sampling for Off-Site Analysis

Prior to sampling for lab analysis all wells were properly flushed as described above. Bailers were used to obtain groundwater samples. Bailers were decontaminated between wells. Samples were placed in properly prepared bottles, and placed in a cooler at 4°C. Coolers were sealed and shipped over night to the designated laboratory. Samples were split and one sample was shipped to the EPA-designated laboratory and the other sent to Princeton Testing Labs. Proper chain-of-custody procedures were followed when transferring the samples from the field to the laboratory. In addition, accurate records were kept of all sampling activity, and include the following information: date, time, location, sample number, depth to water measurement, method and volume of water evacuation and sampling techniques.

A total of 18 samples were analyzed for Priority Pollutants (except asbestos). This includes the wells installed during this investigation, existing monitor wells SV-8, SV-9 and SV-15 and two QA/QC samples.

SAN JOSE SEDIMENT SAMPLING

Sediment samples were collected at four locations along the San Jose Drain (Figure 2). Each location was marked and two samples were collected: one at the surface and one at three foot depth. Samples were split, with one set being shipped to the EPA-designated laboratory and the other to Princeton Testing Labs. Proper chain-of-custody procedures were followed when transferring the samples from the field to the laboratory. In addition, accurate records were kept of all sampling activities, and include the following information: date, time, location, sample number, depth, and sampling techniques. All samples were tested for Priority Pollutants except asbestos.

OVERALL FACILITY INTEGRITY STUDY

San Jose Drain Sediment Sampling. Sediment samples were collected at four locations along the San Jose Drain (Figure 1). At each location, two samples were collected, one at the surface and one at a three foot depth. Samples were tested for Priority Pollutants (except asbestos). Samples were split. One sample was shipped to the HART designated laboratory and one sample shipped to the USAF OEHL laboratory or an EPA laboratory.

Pumping Test. Two pumping tests were conducted using the deep wells and shallow wells in the northwest and southeast corners of the facility.

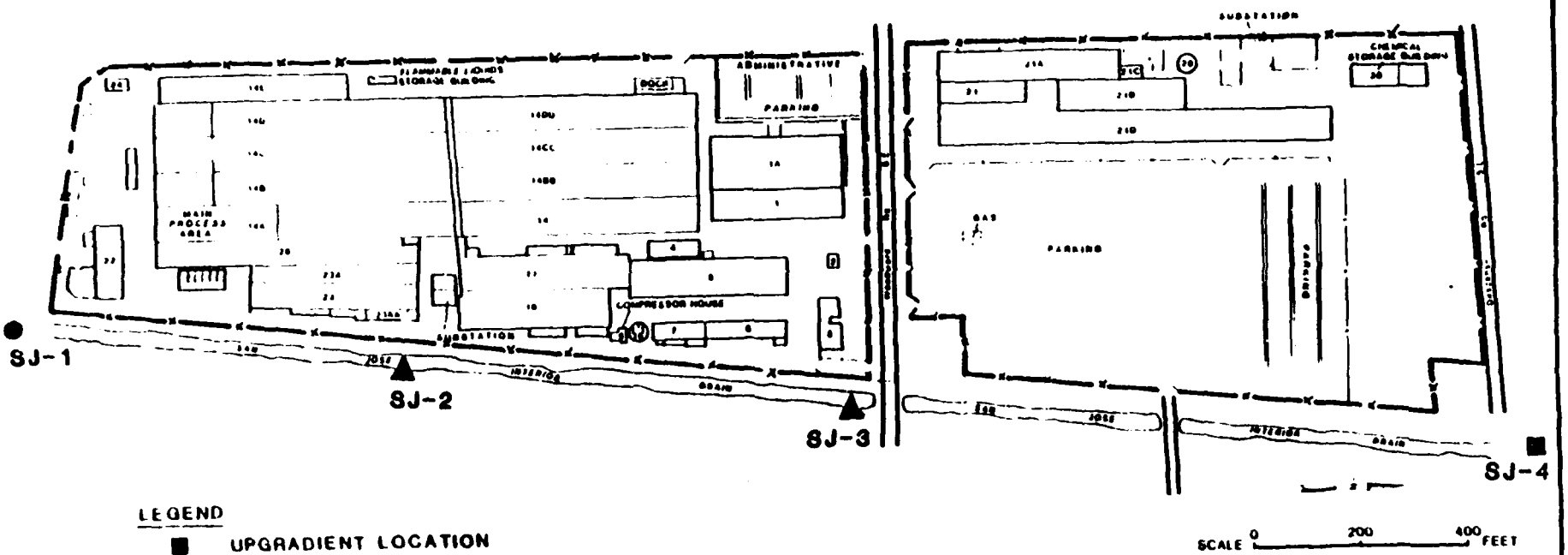
Detailed Investigations of Individual Storage Sites

Hazardous Waste Storage Area No. 1 Investigation. This investigation entailed the installation and continuous sampling of one 30 foot test boring (Figure 2). Based on OVA readings, HART selected up to four soil samples for Priority Pollutant analysis (except asbestos). Samples were split. One sample was shipped to the HART designated laboratory and one to the USAF OEHL or an EPA laboratory. If a confining layer was encountered, an undisturbed sample was obtained for permeability analysis. Also, two samples were analyzed for grain size distribution. One 30 foot, 4 inch diameter PVC monitor well (SW-4) was installed. Drill cuttings

FIGURE 1

FORMER USAF PLANT NO. 83

PROPOSED SEDIMENT SAMPLING LOCATIONS



LEGEND

- ■ UPGRADIENT LOCATION
- ▲ LOCATIONS ADJACENT TO PLANT DISCHARGE POINTS
- ● DOWNGRADIENT LOCATION

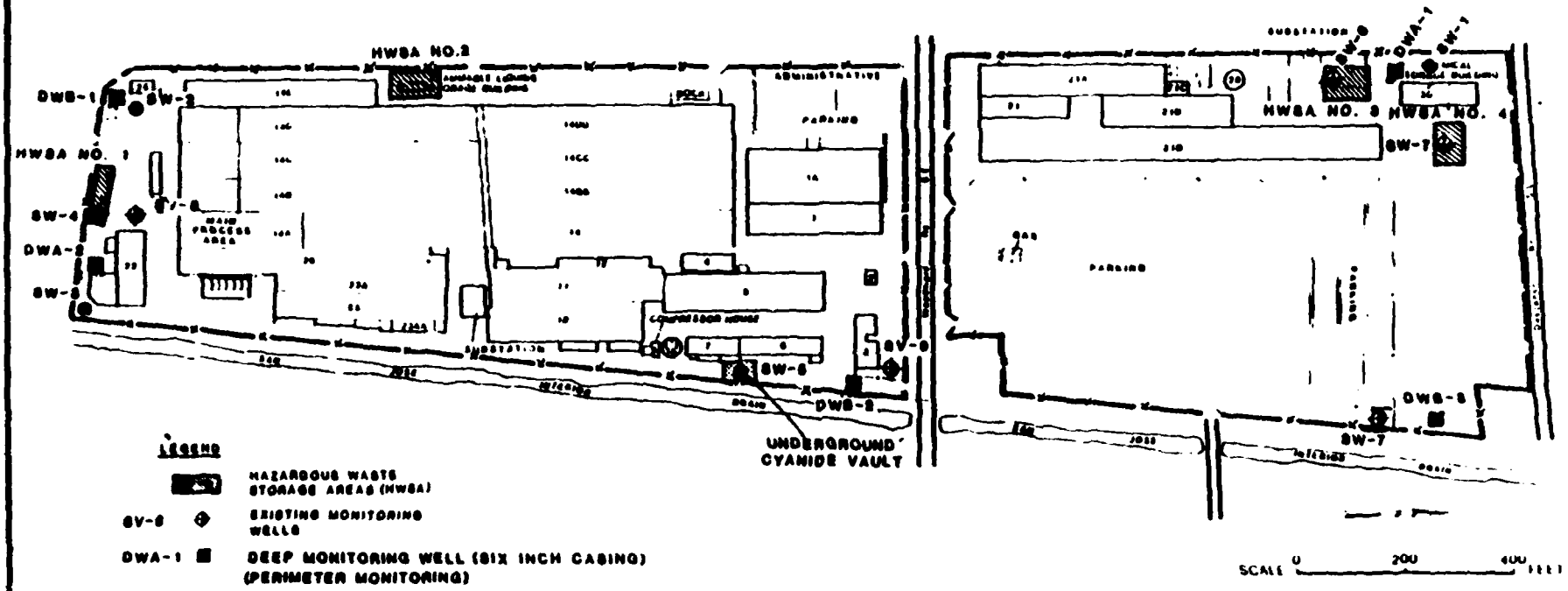
SOURCE: USAF PLANT NO. 83 DOCUMENTS

PREPARED BY: FRED C. HART ASSOCIATES, INC.

FIGURE 2

FORMER USAF PLANT NO. 83

PROPOSED MONITORING WELL LOCATIONS
AND SITES OF POTENTIAL ENVIRONMENTAL CONTAMINATION



LEGEND

- HAZARDOUS WASTE STORAGE AREAS (HWSA)
- SV-8 — EXISTING MONITORING WELLS
- DWA-1 — DEEP MONITORING WELL (SIX INCH CASING) (PERIMETER MONITORING)
- DWB-1 — DEEP MONITOR WELL (FOUR INCH CASING) (PERIMETER MONITORING)
- SW-1 — SHALLOW MONITORING WELL (PERIMETER MONITORING)
- SW-4 — SHALLOW MONITORING WELL USED TO INVESTIGATE A SPECIFIC HWSA

SOURCE: USAF PLANT NO. 83 DOCUMENTS

PREPARED BY: FRED C. HART ASSOCIATES, INC.

were analyzed as to their hazardousness. If drill cuttings were determined to be hazardous, they were drummed by HART for later disposal by GE as hazardous waste. One water sample was taken for Priority Pollutant analysis (except asbestos). This was also split.

SEDIMENT SAMPLING

Hazardous Waste Storage Area No. 2 Investigation. This investigation entailed the installation and continuous sampling of one 30 foot test boring (Figure 2). Based on OVA readings, HART selected four soil samples for Priority Pollutant analysis (except asbestos). Samples were split. One sample was shipped to the HART designated laboratory and one to the USAF OEHL or an EPA laboratory. One undisturbed sample was taken if a confining layer was encountered and two samples were collected for grain size distribution analysis. One 30 foot, 4 inch diameter PVC monitoring well (SW-8) as installed. Drill cuttings were analyzed as to their hazardousness. If drill cuttings were determined to be hazardous, they were drummed by HART and then managed by GE as hazardous waste. One water sample was taken for Priority Pollutant analysis (except asbestos), which was also split.

Hazardous Waste Storage Area No. 3 Investigation. This investigation entailed the installation and continuous sampling of one 30 foot test boring (Figure 2). Based on OVA readings, up to four soil samples were selected for Priority Pollutant analysis (except asbestos). Samples were split. One sample was shipped to the HART designated laboratory and one to the OEHL or an EPA laboratory. One undisturbed sample was taken if a confining layer was encountered and two samples for grain size distribution analysis were collected. One 30 foot, 4 inch diameter PVC monitoring well (SW-6) was installed. Drill cuttings were analyzed as to their hazardousness. If drill cuttings were determined to be hazardous, they were drummed by HART for later disposal by GE as a hazardous waste. One water sample was collected for Priority Pollutant analysis (except asbestos), which was split.

Hazardous Waste Storage Area No. 4 Investigation. This investigation entailed the installation and continuous sampling of one 30 foot test boring (Figure 2). Based on OVA readings, up to four soil samples were collected for Priority Pollutant analysis (except asbestos). Samples were split. One sample was shipped to the HART designated laboratory and one to the USAF OEHL or an EPA laboratory. One undisturbed sample was obtained if a confining layer was encountered and two samples for grain size distribution analysis were collected. A 30 foot, 4 inch diameter PVC monitoring well (SW-7) was installed. Drill cuttings were analyzed as to their hazardousnesses. If drill cuttings were determined to be hazardous they were drummed by HART for later disposal by GE as a hazardous waste. One water sample was collected for Priority Pollutant analysis (except asbestos), which was also split.

Underground Cyanide Vault

A metal detector was used to try to locate the metal cover of the Underground Cyanide Vault. Based upon metal detection data and other information, a backhoe was used to excavate the area. If appropriate, shovels were used in sensitive locations. The tank was examined to determine its structural integrity and potential for leaks. A composite sample of the vault contents were taken and analyzed for total cyanides. Four soil samples were taken from the pit area and soil conditions were examined for evidence of leakage.

If the above investigation indicated contamination around the Underground Cyanide Vault, then a 30 foot test boring was installed and continuously sampled. Up to four soil samples were taken for chemical analysis of cyanide and Priority Pollutants and two samples for grain size distribution analysis were collected. A 30 foot, 4 inch diameter monitor well was installed. A water sample for cyanide and Priority Pollutant analysis was taken, which was also split.

During the investigation no cyanide was found in the vault; therefore, no test borings were installed.

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E.2 LABORATORY DETECTION LIMITS

VOLATILE ORGANICS

Matrix	Method Detection Limit	
	Soil ug/g	Water mg/l
Chloromethane	.020	.002
Bromethane	.100	.010
Dichlorodifluoromethane	.050	.005
Vinyl Chloride	.020	.002
Chloroethane	.020	.002
Methylene chloride	.050	.005
Trichlorofluoromethane	.050	.005
1,1-dichloroethene	.010	.001
1,1-dichloroethane	.010	.001
trans-1,2-dichloroethene	.010	.001
Chloroform	.020	.002
1,2-dichloroethane	.010	.001
1,1,1-trichloroethane	.020	.002
Carbon tetrachloride	.020	.002
Bromodichloromethane	.020	.002
1,2-dichloropropane	.010	.001
trans-1,3-dichloropropene	.050	.005
Trichloroethene	.020	.002
Dibromochloromethane	.020	.002
1,1,2-trichloroethane	.050	.005
cis-1,3-dichloropropene	.050	.005
2-chloroethylvinylether	.050	.005
Bromoform	.100	.010

VOLATILE ORGANICS (CONTINUED)

Matrix	Method Detection Limit	
	Soil ug/g	Water mg/l
1,1,2,2-tetrachloroethane	.100	.010
Tetrachloroethene	.020	.002
Benzene	.010	.001
Toluene	.010	.001
Chlorobenzene	.010	.001
Ethylbenzene	.010	.001
1,3-dichlorobenzene	.010	.001
1,2-dichlorobenzene	.010	.001
1,4-dichlorobenzene	.010	.001

ACID EXTRACTS

Matrix	Method Detection Limit	
	Soil ug/g	Water mg/l
2-Chlorophenol	.001	.025
2,4-Dichlorophenol	.001	.025
2,4-Dimethylphenol	.001	.025
4,6-Dinitro-o-cresol	.010	.250
2,4-Dinitrophenol	.010	.250
2-Nitrophenol	.001	.025
4-Nitrophenol	.001	.025
p-chloro-m-cresol	.001	.025
Pentachlorophenol	.001	.025
Phenol	.001	.025
2,4,6-Trichlorophenol	.001	.025

BASE/NEUTRAL EXTRACTS

Matrix	Method Detection Limit Soil ug/g	Water mg/l
Acenaphthene	.001	.010
Acenaphthylene	.001	.010
Anthracene	.001	.010
Benzidine	.010	.100
Benzo(a)anthracene	.001	.010
Benzo(a)pyrene	.001	.010
3,4-Benzofluoranthene	.001	.010
Benzo(ghi)perylene	.003	.025
Benzo(k)fluoranthene	.001	.010
bis(2-chloroethoxy)methane	.001	.010
bis(2-chloroethyl)ether	.001	.010
bis2-chloroisopropyl)ether	.001	.010
bis(2-ethylhexyl)phthalate	.001	.010
4-bromophenyl phenyl ether	.001	.010
Butylbenzyl phthalate	.001	.010
2-Chloronaphthalene	.001	.010
4-Chlorophenyl phenyl ether	.001	.010
Chrysene	.001	.010
Dibenzo(a,h)anthracene	.003	.025
1,2-Dichlorobenzene	.001	.010
1,3-Dichlorobenzene	.001	.010
1,4-Dichlorobenzene	.001	.010
3,3'-Dichlorobenzidine	.001	.010

BASE/NEUTRAL EXTRACTS (CONTINUED)

Matrix	Method Detection Limit	
	Soil ug/g	Water mg/l
Diethyl phthalate	.001	.010
Dimethyl phthalate	.001	.010
Di-n-butyl phthalate	.001	.010
2,4-Dinitrotoluene	.001	.010
2,6-Dinitrotoluene	.001	.010
Di-n-octyl phthalate	.001	.010
1,2-diphenylhydrazine (as azobenzene)	.001	.010
Fluoranthene	.001	.010
Fluorene	.001	.010
Hexachlorobenzene	.001	.010
Hexchlorobutadiene	.001	.010
Hexachlorocyclopentadiene	.001	.010
Hexachloroethane	.001	.010
Ideno(1,2,3-cd)pyrene	.003	.025
Isophorone	.001	.010
Naphthalene	.001	.010
Nitrobenzene	.001	.010
N-nitrosodimethylamine	.001	.010
N-introsodi-n-propylamine	.001	.010
N-nitrosodiphenylamine	.001	.010
Phenanthrene	.001	.010
Pyrene	.001	.010
1,2,4-Trichlorobenzene	.001	.010

PESTICIDES AND PCBS SOIL

Matrix	Method Detection Limit	
	Soil ug/g	Water mg/l
Aldrin	.001	.001
BHC, alpha	.001	.001
BHC, beta	.001	.001
BHC, gamma Lindane	.001	.001
BHC, delta	.001	.001
Chlordane	.005	.002
4,4'-DDT	.001	.001
4,4'-DDE	.001	.001
4,4'-DDD	.001	.001
Dieldrin	.001	.001
Endosulfan, alpha	.001	.001
Endosulfan, beta	.001	.001
Endsosulfan sulfate	.001	.001
Endrin	.001	.001
Endrin aldehyde	.001	.001
Heptachlor	.001	.001
Heptaclor epoxide	.001	.001
Aroclor 1242	.005	.005
Aroclor 1254	.005	.005
Aroclor 1221	.005	.005
Aroclor 1232	.005	.005
Aroclor 1248	.005	.005
Aroclor 1260	.005	.005
Aroclor 1016	.005	.005
Toxaphene	.005	.005

METALS AND MISCELLANEOUS COMPOUNDS

Matrix	Method Detection Limit	
	Soil ug/g	Water mg/l
Beryllium	3	.02
Cadmium	2	.01
Chromium	2	.02
Copper	1	.02
Nickel	1	.02
Lead	2	.02
Zinc	2	.02
Arsenic	2	.01
Silver	1	.01
Antimony	5	.02
Selenium	.25	.01
Thallium	3	.03
Mercury	.05	.001
Cyanide	5	.01
Phenols	6	.1

E.3 PTL HOLDING TIMES

		EXTRACTION or PREP DATES					RUN DATES			
JOB #	SAMPLE #	P/PCB	BN	AX	VO-601,602		P/PCB	BN/AX	VO-601/602	
37738 S(12)	1	4/16	4/15	4/15	4/2		5/1	5/2	4/15	
In: 4/1	2	4/16	4/15	4/15	4/2		5/1	5/2	4/15	
	3	4/16	4/15	4/15	4/2		5/1	5/2	4/15	
	4	4/16	4/15	4/15	4/2		5/1	5/3	4/15	
	5	4/16	4/15	4/15	4/2		5/1	5/6	4/15	
	6	4/16	4/15	4/15	4/2		5/1	5/6	4/17	
	7	4/16	4/15	4/15	4/2		5/1	5/3	4/17	
	8	4/16	4/15	4/15	4/2		5/1	5/3	4/17	
	9	4/16	4/15	4/15	4/2		5/1	5/3	4/17	
	10	4/16	4/15	4/15	4/2		5/1	5/3	4/17	
	11	4/16	4/15	4/15	4/2		5/1	5/3	4/17	
	R	4/16	4/15	4/15	4/2		5/1	5/3	4/17	
37893 S(7)	13	4/26	4/25	4/25	4/11		4/29	5/3	4/17	
In: 4/9	14	4/26	4/25	4/25	4/11		4/29	5/3	4/17	
	15	4/26	4/25	4/25	4/11		4/29	5/6	4/18	
	16	4/26	4/25	4/25	4/11		4/29	5/6	4/18	
	17	4/26	4/25	4/25	4/11		4/29	5/6	4/18	
	18	4/26	4/25	4/25	4/11		4/29	5/6	4/18	
	19	4/26	4/25	4/25	4/11		4/29	5/6	4/18	
38041 S(18)	20	6/6	5/6	5/6	4/22		6/11	5/7	5/21	
In: 4/19	21	6/6	5/6	5/6	4/22		6/11	5/7	5/21	
	22	6/6	5/6	5/6	4/22		6/11	5/7	5/21	
	23	6/6	5/6	5/6	4/22		6/11	5/7	5/21	
	24	6/6	5/6	5/6	4/22		6/11	5/7	5/21	
	25	6/6	5/6	5/6	4/22		6/11	5/7	5/21	
	26	6/6	5/7	5/7	4/22		6/11	5/8	5/21	
	27	6/6	5/7	5/7	4/22		6/11	5/8	5/21	
	28	6/6	5/7	5/7	4/22		6/11	5/8	5/21	
	29	6/6	5/7	5/7	4/22		6/11	5/8	5/21	

TOB #		SAMPLES	EXTRACTION or PREP DATES P/PCB	BN	AX	VO- 600/603		RUN DATES P/PCB	BN/AX	VO- 601/602
38041	30		6/6	5/7	5/7	4/22		6/11	5/8	5/21
In 4/19	31		6/6	5/7	5/7	4/22		6/11	5/8	5/21
	32		6/6	5/7	5/7	4/22		6/11	5/8	5/21
	33		6/6	5/7	5/7	4/22		6/11	5/8	5/21
	34		6/6	5/7	5/7	4/22		6/11	5/8	5/23
	35		6/6	5/7	5/7	4/22		6/11	5/8	5/23
	36		6/6	5/7	5/7	4/22		6/11	5/8	5/23
	37		6/6	5/7	5/7	4/22		6/11	5/8	5/24
38440 s(3)	38		5/17	5/20	5/20	5/6		5/23	5/21	5/24
In: 4/25	39		5/17	5/20	5/20	5/6		5/23	5/21	5/24
	40		5/17	5/20	5/20	5/6		5/23	5/21	5/24
w(5)	41		5/21	5/21	5/21	N.A.		6/1	5/22	5/25
	42		5/21	5/21	5/21	N.A.		6/1	5/22	5/25
	43		5/21	5/21	5/21	N.A.		6/1	5/22	5/25
	44		5/21	5/21	5/21	N.A.		6/1	5/22	5/25
	45		5/21	5/21	5/21	N.A.		6/1	5/22	5/25
s(3)	46		6/18	5/20	5/20	5/6		6/20	5/21	5/24
	47		6/17	5/20	5/20	5/6		5/23	5/21	5/24
	48		6/17	5/20	5/20	5/6		5/23	5/21	5/24
	49		broken							
38180 w(4)	50		6/18	5/13	5/13	N.A.		6/20	5/17	5/25
In: 4/29	51		6/18	5/13	5/13	N.A.		6/20	5/17	5/25
	52		broken			N.A.				5/25
	53		6/18	5/13	5/13	NA		6/20	5/17	5/26
	54		6/18	5/13	5/13	N.A.		6/20	5/17	5/25
38420 w(1)	55	In: 5/13	6/3	6/3	6/3	N.A.		6/6	6/5	5/29
38479 w(1)	56		5/14	5/10	5/10	N.A.		5/22, 6/1	5/16	5/25
	57					N.A.		5/22	5/17	5/25
In: 4/29	58		5/14	5/10	5/10	N.A.		5/22	5/17	5/25
	59					N.A.		5/22	5/17	5/25
	60		5/14	5/10	5/10	N.A.		5/22	5/16	5/25
	61		5/14	5/10	5/10	NA		5/22	5/16	5/25

METALS HOLDING TIMES

Appendix E.3

FROM:	PRINCETON TESTING LABORATORY			
TO: FRED C.	HART ASSOCIATES	SAMPLE Nos. 13-18	SAMPLE Nos. 20-37	SAMPLE Nos 38-48
		JOB# 37893	38041	38146
DATE	RECEIVED	4/9/85	4/19/85	4/25/85
TOTAL	METAL DIGESTION	4/11/85	4/22/85	4/26/85
DATE OF	ANALYSIS FOR			
Beryllium	Be	4/17/85	5/8/85	5/20/85
Cadmium	Cd	4/22/85	5/2/85	
Chromium	Cr			
Copper	Cu			
Nickel	Ni			
Lead	Pb			
Zinc	Zn			
Arsenic	As	5/1/85	5/1-5/3/85	6/4/85
Silver	Ag	4/22/85	5/2/85	5/20/85
Antimony	Sb	4/17/85	5/8/85	5/20/85
Selenium	Se	4/21/85	4/28/85	5/8/85
Thallium	Tl	4/17/85	5/8/85	5/20/85
Mercury	Hg	4/16/85	5/1/85	5/9/85
Cyanide	CN^-	4/26/85	5/6/85	5/20/85
	PHENOL	4/26/85	5/10/85	5/20/85

John C. Clarke

Princeton Service Center
U.S. Route 1
609-452-9050
TLX 84-3492

princeton testing laboratory

P.O. Box 3108, Princeton, N.J. 08540

Member

DATE: July 11, 1985

TO:
Jill Greenberg
Fred C. Hart
530 Fifth Ave.
New York, NY 10036

RECEIVED JUL 16 1985

JOB NO.

AUTHORIZATION:

SAMPLE:

REPORT OF ANALYSIS

	(#1-12) #37738	(#50-51)	(#52-54)	(#55)	(#19) #38429
Date Received	4/1/85	[illegible]	[illegible]	[illegible]	5/14/85
Total Metal Digestion	4/[illegible]/85	[illegible]	[illegible]	5/14/85	[illegible]/15/85
Date of Analysis For:					
Beryllium	4/10/85	5/[illegible]/85	[illegible]	5/20/85	[illegible]/20/85
Cadmium	4/10/85	5/[illegible]/85	[illegible]	5/20/85	[illegible]
Chromium	4/10/85	[illegible]	[illegible]	[illegible]	[illegible]
Copper	4/10/85	[illegible]	[illegible]	[illegible]	5/20/85
Nickel	4/10/85	[illegible]	[illegible]	[illegible]	[illegible]/20/85
Lead	4/8/85	[illegible]	[illegible]	[illegible]	5/20/85
Zinc	4/10/85	[illegible]	[illegible]	[illegible]	5/20/85
Arsenic	4/[illegible] & 4/[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Silver	[illegible]/10/85	[illegible]	[illegible]	[illegible]	[illegible]
Antimony	4/10/85	[illegible]	[illegible]	5/20/85	5/20/85
Selenium	4/21/85	5/9/85	5/[illegible]/85	5/23/85	5/23/85
Thallium	4/10/85	5/[illegible]/85	5/[illegible]/85	5/20/85	5/20/85
Mercury	4/8/85	5/9/85	5/2/85	5/17/85	5/17/85
Cyanide	4/18/85	5/[illegible]/85	[illegible]	5/28/85	5/28/85
Phenols	4/17/85	5/20/85	5/[illegible]/85	5/27/85	5/27/85

[illegible] A. Allen, Manager
[illegible], Waste Water & Microbiology

[illegible] F. Pickup, Director

[illegible]/sk

<- less than < ND - element is less than the value given and not detected by [illegible] employed > - greater than ND - [illegible] detected

APPENDIX F

CHAIN OF CUSTODY FORMS

CHAIN OF CUSTODY RECORD

Project # G104

Project Name: AF/GE 83

Samplers Signature: Dennis P Farley

ANALYSIS REQUIRED

Stat.#	Date	Time	Comp	Grab	Station Location	Solids	Aldehydes	Phenolics	Mercury	Metals	Cyanides	Asbestos	Organics GC/MS	Base/Neutral	Volatile Organics	Pesticides & PCB's	Bacteriology	Misc. Chem.	# of Containers	REMARKS
1	3/28/81	—	X		DWB-3, SS-7,8,9															PRIORITY POLLUTANTS
2	3/28	—	X		DWB-3, SS-14, 15															
3	3/28	—	X		DWB-3, SS-23, 24, 25															
4	3/28	—	X		DWB-3, SS 36, 37															
5	3/29	1540		X	SJ-1, 0'															
6	3/29	1540		X	SJ-1, 3'															
7	3/29	1555		X	SJ-2, 0'															
8	3/29	1555		X	SJ-2, 3'															
9	3/29	1610		X	SJ-3, 0'															
10	3/29	1610		X	SJ-3, 3'															

Relinquished by: (signature)	Date/time	Received by: (signature)	Relinquished by: (signature)	Date/time	Received by: (signature)
Dennis Farley / Dennis P Farley	3/29 1700				
Relinquished by: (signature)	Date/time	Received by: (signature)	Relinquished by: (signature)	Date/time	Received by: (signature)
Relinqished by: (signature)	Date/time	Received for laboratory by(signature):	Date/time	REMARKS	

Princeton Testing Laboratory, PO Box 3108, Princeton, NJ 08540

CHAIN OF CUSTODY RECORD

Project # G104

Project Name: AFIGC 83

Samplers Signature: Dennis P Farley

Stat.#	Date	Time	Comp	Grab	Station Location	Solids	Aldehydes	Phenolics	Mercury	Metals	Cyanides	Asbestos	Organics GC/MS	Base/Neutral	Volatile Organics	Pesticides & PCB's	Bacteriology	Misc. Chem.	# of Containers	REMARKS
11	3/29	1630		X	SJ4-0'															PRIORITY POLLUTANTS
12	3/29	1630		X	SJ4-3'															"

Relinquished by: (signature)	Date/time	Received by: (signature)	Relinquished by: (signature)	Date/time	Received by: (signature)
Dennis Farley Dennis P Farley	3/29 1700				
Relinquished by: (signature)	Date/time	Received by: (signature)	Relinquished by: (signature)	Date/time	Received by: (signature)
Relinqished by: (signature)	Date/time	Received for laboratory by(signature):	Date/time	REMARKS	

Princeton Testing Laboratory, PO Box 3108, Princeton, NJ 08540

CHAIN OF CUSTODY RECORD

Project # G104

Project Name: AF/GE 83

Samplers Signature: Dennis P Farley

ANALYSIS REQUIRED

Stat.#	Date	Time	Comp	Grab	Station Location	Solids	Aldehydes	Phenolics	Mercury	Metals	Cyanides	Asbestos	Organics GC/MS	Base/Neutral	Volatile Organics	Pesticides & PCB's	Bacteriology	Misc. Chem.	# of Containers	REMARKS
13	4/3/85	—	X	X	DWB-2, SS 8,9															PRIORITY POLLUTANTS
14	4/3	—	X	X	DWB-2, SS 16,17															
15	4/3	—	X		DWB-2, SS 28,29															
16	4/3	—	X		DWB-2, SS 40,41															
17	4/9	—	X		DWA-2, SS 3,4															
18	4/9	—	X		DWA-2, SS 7, 8															
19	4/9	—	X		DWA-2, SS 28,29															

Relinquished by: (signature)	Date/time	Received by: (signature)	Relinquished by: (signature)	Date/time	Received by: (signature)
DENNIS FARLEY Dennis P Farley	4/9 1730				
Relinquished by: (signature)	Date/time	Received by: (signature)	Relinquished by: (signature)	Date/time	Received by: (signature)
Relinqished by: (signature)	Date/time	Received for laboratory by(signature):	Date/time	REMARKS	

Princeton Testing Laboratory, PO Box 3108, Princeton, NJ 08540

CHAIN OF CUSTODY RECORD

Project # G104

Project Name: AF/GE 83

Samplers Signature: Dennis P Farley

Stat.#	Date	Time	Comp	Grab	Station Location	Solids	Aldehydes	Phenolics	Mercury	Metals	Cyanides	Asbestos	Organics GC/MS	Base/Neutral	Volatile Organics	Pesticides & PCB's	Pesticides	Misc. Chem.	# of Containers	REMARKS
20	4/9/85	—	✓		DWA-1, SS-2,3															PRIORITY POLLUTANTS
21	4/9	—	✓		DWA-1, SS-10,11															
22	4/9	—	✓		DWA-1, SS-24,25,26															
23	4/9	—	✓		DWB-1, SS-3,4															
24	4/9	—	✓		DWB-1, SS-19,20															
25	4/9	—	✓		DWB-1, SS-28,29															
26	4/17/85	—	✓		SW-3, SS-2,3															
27	4/17	—	✓		SW-3, SS-17,18															
28	4/17	—	✓		SW-8, SS-2,3															
29	4/17	—	✓		SW-8, SS-15,16															

ANALYSIS REQUIRED

Relinquished by: (signature)	Date/time	Received by: (signature)	Relinquished by: (signature)	Date/time	Received by: (signature)
Dennis Farley Dennis P Farley	1400 4/16/85				
Relinquished by: (signature)	Date/time	Received by: (signature)	Relinquished by: (signature)	Date/time	Received by: (signature)
Relinqished by: (signature)	Date/time	Received for laboratory by(signature):	Date/time	REMARKS	

Princeton Testing Laboratory, PO Box 3108, Princeton, NJ 08540

CHAIN OF CUSTODY RECORD

Project # G104

Project Name: AFIGE 83

Samplers Signature: Dennis P Farley

Stat.#	Date	Time	Comp	Grab	Station Locatior	Solids	Aldehydes	Phenolics	Mercury	Metals	Cyanides	Asbestos	Organics GC/MS	Base/Neutral	Volatile Organics	Pesticides & PCB's	Bacteriology	Misc. Chem.	# of Containers	REMARKS
30	4/17/85	—	✓		SW-4, SS-3,4															PRIORITY POLLUTANTS
31	4/17	—	✓		SW-4, SS-14,15,16															
32	4/17	—	✓		SW-4, SS-20,21															
33	4/17	—	✓		SW-2, SS-2,3															
34	4/17	—	✓		SW-2, SS-17,18															
35	4/17	—	✓		TB-14C, SS-3,4															
36	4/17	—	✓		TB-14C, SS-5,6															
37	4/17	—	✓		TB-14C, SS-7,8															

Relinquished by: (signature)	Date/time	Received by: (signature)	Relinquished by: (signature)	Date/time	Received by: (signature)
DENNIS FARLEY Dennis P Farley	1400 4/18/85				
Relinquished by: (signature)	Date/time	Received by: (signature)	Relinquished by: (signature)	Date/time	Received by: (signature)
Relinqished by: (signature)	Date/time	Received for laboratory by(signature):	Date/time	REMARKS	

Princeton Testing Laboratory, PO Box 3108, Princeton, NJ 08540

APPENDIX G

ANALYTICAL DATA

SECOND SAMPLING OF GROUNDWATER

VOC ANALYTICAL RESULTS

JULY 1985

Appendix G.1

GROUNDWATER SAMPLE NUMBERS

Original Sample No.	Corresponds to Sample No.	Borehole No.
41	62	DWB-1
42	63	DWB-2
43	64	DWB-3
44	65	DWA-1
45	66	DWA-2
50	67	SW-6
51	68	SV-9
52	69	SV-15
53	70	SW-2
54	71	SW-3
55	72	SW-4
56	73	SW-8
57	74	SW-1
58	75	SW-7
59	76	SW-8
61	77	Field Blank

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609-452-9050
TLX 84-3492

princeton testing laboratory

Member

7-18-85
Job #: 39378
Fred C. Hart

	Detection Limit	#65	#66	#68
			ug/gm	
Chloromethane	4	ND	ND	ND
Bromomethane	20	ND	ND	ND
Dichlorodifluoromethane	10	ND	ND	ND
Vinyl Chloride	4	ND	ND	ND
Chloroethane	4	ND	ND	ND
Methylene chloride	10	< 10	< 10	< 10
Trichlorofluoromethane	10	ND	< 10	ND
1,1-dichloroethene	2	ND	ND	ND
1,1-dichloroethane	2	ND	4.3	ND
trans-1,2-dichloroethene	2	ND	ND	ND
Chloroform	4	< 4	< 4	ND
1,2-dichloroethane	2	ND	ND	ND
1,1,1-trichloroethane	4	ND	< 4	ND
Carbon tetrachloride	4	ND	ND	ND
Bromodichloromethane	4	ND	ND	ND
1,2-dichloropropane	2	ND	ND	ND
trans-1,3-dichloropropene	10	ND	ND	ND
Trichloroethene	4	ND	ND	ND
Dibromochloromethane	4	ND	ND	ND
1,1,2-trichloroethane	10	ND	ND	ND
cis-1,3-dichloropropene	10	ND	ND	ND
2-chloroethylvinylether	10	ND	ND	ND
Bromoform	20	ND	ND	ND
1,1,2,2-tetrachloroethane	20	ND	ND	ND
Tetrachloroethene	4	ND	ND	ND
Benzene	2	ND	< 2	< 2
Toluene	2	ND	< 2	ND
Chlorobenzene	2	ND	ND	ND
Ethylbenzene	2	ND	< 2	ND
1,3-dichlorobenzene	2	ND	ND	ND
1,2-dichlorobenzene	2	ND	ND	ND
1,4-dichlorobenzene	2	ND	ND	ND

ND=not detected

Jon Gabry, PhD
Asst. Organic Lab Manager

na'

Princeton Service Center
U.S. Route 1
609-452-9050
TLX 84-3492

princeton testing laboratory

Member

Job #39378
7-18-85
Fred C. Hart

	Detection Limit	ug/gm #62	#63	#64	#69	#69[b]
Chloromethane	2	ND	ND	ND	ND	ND
Bromomethane	10	ND	ND	ND	ND	ND
Dichlorodifluoromethane	5	ND	ND	ND	ND	ND
Vinyl Chloride	2	ND	ND	ND	ND	ND
Chloroethane	2	ND	ND	ND	ND	ND
Methylene chloride	5	ND	ND	ND	ND	ND
Trichlorofluoromethane	5	ND	ND	ND	ND	ND
1,1-dichloroethene	1	ND	ND	< 1	6.6	7.3
1,1-dichloroethane	1	ND	2.9	5.7	76	82
trans-1,2-dichloroethene	1	ND	ND	ND	ND	ND
Chloroform	2	ND	ND	ND	ND	ND
1,2-dichloroethane	1	ND	ND	1.4	ND	ND
1,1,1-trichloroethane	2	ND	< 2	ND	ND	ND
Carbon tetrachloride	2	ND	ND	< 2	ND	ND
Bromodichloromethane	2	ND	ND	ND	ND	ND
1,2-dichloropropane	1	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	5	ND	ND	ND	ND	ND
Trichloroethene	2	ND	ND	ND	ND	ND
Dibromochloromethane	2	ND	ND	ND	ND	ND
1,1,2-trichloroethane	5	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	5	ND	ND	ND	ND	ND
2-chloroethylvinylether	5	ND	ND	ND	ND	ND
Bromoform	10	ND	ND	ND	ND	ND
1,1,2,2-tetrachloroethane	10	ND	ND	ND	ND	ND
Tetrachloroethene	2	ND	< 2	< 2	ND	ND
Benzene	1	ND	ND	ND	ND	ND
Toluene	1	2.4	ND	1.3	< 1	< 1
Chlorobenzene	1	ND	ND	ND	ND	ND
Ethylbenzene	1	ND	ND	ND	ND	ND
1,3-dichlorobenzene	1	ND	ND	ND	ND	ND
1,2-dichlorobenzene	1	ND	ND	ND	ND	ND
1,4-dichlorobenzene	1	ND	ND	ND	ND	ND

ND=not detected

Jon Gabry,PhD
Asst.Organic Lab Manager

b-second column confirmation on Porosil-C 100/120 mesh with n-octane column.

na

Princeton Service Center
U.S. Route 1
609-452-9050
TLX 84-3492

princeton testing laboratory

Member

July 18, 1985
Job #39381
Fred C. Hart

	Detection Limit	#67	#70	ug/gm #71	#72	#73	#76
Chloromethane	2	ND	ND	ND	ND	ND	ND
Bromomethane	10	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	5	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	ND	ND	ND	ND	ND	ND
Chloroethane	2	ND	ND	ND	ND	ND	ND
Methylene chloride	5	ND	< 5	< 5	< 5	< 5	< 5
Trichlorofluoromethane	5	ND	ND	ND	ND	ND	ND
1,1-dichloroethene	1	14	ND	ND	ND	1.2	1.4
1,1-dichloroethane	1	85	ND	5.8	ND	28	28
trans-1,2-dichloroethene	1	11	ND	6	ND	ND	ND
Chloroform	2	ND	ND	ND	ND	ND	ND
1,2-dichloroethane	1	ND	ND	1.3	ND	2	ND
1,1,1-trichloroethane	2	74	ND	5.9	ND	ND	ND
Carbon tetrachloride	2	ND	ND	ND	ND	ND	ND
Bromodichloromethane	2	ND	ND	ND	ND	ND	ND
1,2-dichloropropane	1	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	5	ND	ND	ND	ND	ND	ND
Trichloroethene	2	ND	ND	ND	ND	ND	ND
Dibromochloromethane	2	ND	ND	ND	ND	ND	ND
1,1,2-trichloroethane	5	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	5	ND	ND	ND	ND	ND	ND
2-chloroethylvinylether	5	ND	ND	ND	ND	ND	ND
Bromoform	10	ND	ND	ND	ND	ND	ND
1,1,2,2-tetrachloroethane	10	ND	ND	ND	ND	ND	ND
Tetrachloroethene	2	65	ND	34	ND	ND	ND
Benzene	1	ND	< 1	< 1	< 1	< 1	< 1
Toluene	1	< 1	< 1	< 1	ND	ND	ND
Chlorobenzene	1	ND	ND	ND	ND	ND	ND
Ethylbenzene	1	ND	ND	ND	ND	ND	ND
1,3-dichlorobenzene	1	ND	ND	ND	ND	ND	ND
1,2-dichlorobenzene	1	ND	ND	ND	ND	ND	ND
1,4-dichlorobenzene	1	ND	ND	ND	ND	ND	ND

ND=not detected

Jon Gabrv,PhD
Asst.Organic Lab Manager

na

Princeton Service Center
U.S. Route 1
609-452-9050
TLX 84-3492

princeton testing laboratory

Job # 39381
7-18-85
Fred C. Hart

	Detection Limit	#77	Trip Blank	#71[b]	#73[b]	#67[b]
				ug/gm		
Chloromethane	2	ND	ND	ND	ND	ND
Bromomethane	10	ND	ND	ND	ND	ND
Dichlorodifluoromethane	5	ND	ND	ND	ND	ND
Vinyl Chloride	2	ND	ND	ND	ND	ND
Chloroethane	2	ND	ND	ND	ND	ND
Methylene chloride	5	< 5	< 5	ND	< 5	ND
Trichlorofluoromethane	5	ND	ND	ND	ND	ND
1,1-dichloroethene	1	ND	ND	ND	1.4	22
1,1-dichloroethane	1	ND	ND	3.2	22	97
trans-1,2-dichloroethene	1	ND	ND	ND	ND	21
Chloroform	2	< 2	< 2	< 2	ND	3
1,2-dichloroethane	1	ND	ND	1.5	< 1	6.1
1,1,1-trichloroethane	2	ND	ND	ND	ND	69
Carbon tetrachloride	2	ND	ND	ND	ND	ND
Bromodichloromethane	2	ND	ND	ND	ND	ND
1,2-dichloropropane	1	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	5	ND	ND	ND	ND	ND
Trichloroethene	2	ND	ND	4.5	ND	ND
Dibromochloromethane	2	ND	ND	ND	ND	ND
1,1,2-trichloroethane	5	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	5	ND	ND	ND	ND	ND
2-chloroethylvinylether	5	ND	ND	ND	ND	ND
Bromoform	10	ND	ND	ND	ND	ND
1,1,2,2-tetrachloroethane	10	ND	ND	ND	ND	ND
Tetrachloroethene	2	ND	ND	19	ND	140
Benzene	1	< 1	ND	ND	ND	< 1
Toluene	1	1.6	< 1	ND	ND	< 1
Chlorobenzene	1	ND	ND	ND	ND	ND
Ethylbenzene	1	ND	ND	ND	ND	ND
1,3-dichlorobenzene	1	ND	ND	ND	ND	ND
1,2-dichlorobenzene	1	ND	ND	ND	ND	ND
1,4-dichlorobenzene	1	ND	ND	ND	ND	ND

ND=not detected

Jon Gabry, PhD
Asst. Organic Lab Manager

b-Second column confirmation on Porosil-C 100/120 mesh with n-octane column.

na

Princeton Service Center
U.S. Route 1
609-452-9050
TLX 84-3492

princeton testing laboratory

Member

Job #39381
7-18-85
Fred C. Hart

	Detection Limit	ug/gm #74	#75	#74[b]	#75[b]
Chloromethane	20	ND	ND	ND	ND
Bromomethane	100	ND	ND	ND	ND
Dichlorodifluoromethane	50	ND	ND	ND	ND
Vinyl Chloride	20	ND	ND	ND	ND
Chloroethane	20	ND	ND	ND	ND
Methylene chloride	50	< 50	< 50	< 50	< 50
Trichlorofluoromethane	50	ND	ND	ND	ND
1,1-dichloroethene	10	32	38	75	90
1,1-dichloroethane	10	300	300	200	240
trans-1,2-dichloroethene	10	35	ND	11	14
Chloroform	20	< 20	ND	< 20	< 20
1,2-dichloroethane	10	ND	32	< 10	< 10
1,1,1-trichloroethane	20	28	ND	120	38
Carbon tetrachloride	20	ND	ND	ND	ND
Bromodichloromethane	20	ND	ND	ND	ND
1,2-dichloropropane	10	ND	ND	ND	ND
trans-1,3-dichloropropene	50	ND	ND	ND	ND
Trichloroethene	20	29	< 20	ND	ND
Dibromochloromethane	20	ND	ND	ND	ND
1,1,2-trichloroethane	50	ND	ND	ND	ND
cis-1,3-dichloropropene	50	ND	ND	ND	ND
2-chloroethylvinylether	50	ND	ND	ND	ND
Bromoform	100	ND	ND	ND	ND
1,1,2,2-tetrachloroethane	100	ND	ND	ND	ND
Tetrachloroethene	20	< 20	ND	< 20	ND
Benzene	10	< 10	< 10	ND	< 10
Toluene	10	< 10	ND	ND	ND
Chlorobenzene	10	ND	ND	ND	ND
Ethylbenzene	10	ND	ND	ND	ND
1,3-dichlorobenzene	10	ND	ND	ND	ND
1,2-dichlorobenzene	10	ND	ND	ND	ND
1,4-dichlorobenzene	10	ND	ND	ND	ND

ND=not detected

b-Second column confirmation on Porosil-C 100/120 mesh with n-octane column

Jon Gabry,PhD
Asst.Organic Lab Manager

na

SECOND COLUMN CONFIRMATION

ANALYTICAL RESULTS FOR FIVE

SUBSURFACE SOIL SAMPLES

Appendix G.1

Princeton Service Center
U.S. Route 1
(609) 452-9060
Tlx-84-3942

princeton testing laboratory

Fred C. Hart
530 Fifth Ave
New York NY 10036
ATT: Jim Mack

	Detection Limit	ug/gm #1	#13	#25	#28	#31	
Chloromethane	.02	ND	ND	ND	ND	ND	
Bromomethane	.10	ND	ND	ND	ND	ND	
Dichlorodifluoromethane	.05	ND	ND	ND	ND	ND	
Vinyl Chloride	.02	ND	ND	ND	ND	ND	
Chloroethane	.02	ND	ND	ND	ND	ND	
Methylene chloride	.05	.27	.29	.28	.11	.21	
Trichlorofluoromethane	--	--	--	--	--	--	
1,1-dichloroethene	.01	ND	ND	ND	ND	ND	
1,1-dichloroethane	.01	ND	ND	ND	ND	ND	
trans-1,2-dichloroethene	.01	ND	ND	ND	ND	ND	
Chloroform	.02	.05	ND	ND	ND	ND	
1,2-dichloroethane	.01	ND	ND	ND	ND	ND	
1,1,1-trichloroethane	.02	ND	ND	ND	ND	ND	
Carbon tetrachloride	.02	ND	ND	ND	ND	ND	
Bromodichloromethane	.02	ND	ND	ND	ND	ND	
1,2-dichloropropane	.01	ND	ND	ND	ND	ND	
trans-1,3-dichloropropene	.05	ND	ND	ND	ND	ND	
Trichloroethene	.02	.03	ND	ND	ND	ND	ND
Dibromochloromethane	.02	ND	ND	ND	ND	ND	
1,1,2-trichloroethane	.05	ND	ND	ND	ND	ND	
cis-1,3-dichloropropene	.05	ND	ND	ND	ND	ND	
2-chloroethylvinylether	.05	ND	ND	ND	ND	ND	
Bromoform	.10	ND	ND	ND	ND	ND	
1,1,2,2-tetrachloroethane	.10	ND	ND	ND	ND	ND	
Tetrachloroethene	.02	.07	ND	.07	ND	ND	
Benzene	.01	.03	.02	.01	.01	.01	
Toluene	.01	ND	ND	ND	ND	ND	
Chlorobenzene	.01	ND	ND	ND	ND	ND	
Ethylbenzene	.01	ND	ND	ND	ND	ND	
1,3-dichlorobenzene	.01	ND	ND	ND	ND	ND	
1,2-dichlorobenzene	.01	ND	ND	ND	ND	ND	
1,4-dichlorobenzene	.01	ND	ND	ND	ND	ND	

ND=not detected

Jon Gabry, PhD
Asst. Organic Lab Manager

ANALYTICAL RESULTS

RE-ANALYSIS OF

ANTIMONY AND CHROMIUM

Appendix G.1

WATER/INORGANIC WORKSHEET

COMPANY FRED C. HART

ADDRESS

CITY STATE ZIP

ATTN

JOB #

DATE

AUTH

QUOTED AT

SAMPLE

REANALYSIS OF ANTIMONY & CHROMIUM
ANALYTICAL RESULTS

		Sb	Cr
38180	#52 (mg/L)		1.3
37893 (mg/kg)	#13	<1.0	
	14	5.2	
	15	2.4	
	16	2.8	
	17	10.4	
	18	2.8	
38140 (mg/kg)	#47	1.5	337
38041 (mg/kg)	#20	1.5	8.5
	21	<1.0	5.1
	22	<1.0	2.4
	23	<1.0	10.1
	24	0.8	10.6
	25	<1.0	9.6
	26	<1.0	12.5
	27	2.4	24.6
	28	1.8	13.4
	29	0.35	9.4

WATER/INORGANIC WORKSHEET

COMPANY _____ JOB # _____

ADDRESS _____ DATE _____

CITY _____ STATE _____ ZIP _____ ATTN _____

ATT: _____ QUOTED AT _____

SAMPLE _____

REANALYSIS OF ANTIMONY & CHROMIUM
ANALYTICAL RESULTS

		Sb		Cr
(CONT)				
38041 (mg/kg)	#30	1.2		2.45
	31	<1.0		12.2
	32	<1.0		5.6
	33	2.2		20.2
	34	6.4		34.5
	35	4.5		14.5
	36	2.4		25.0
	37	4.9		18.4
		Ni	Zn	Pb
38041 (mg/kg)	#30	26.8	122.	17.8
	22	12.8	29.2	9.5
	21	19.2	21.9	5.0
	24	22.5	51.0	7.2
	30	10.8	33.8	22.8
	33	15.8	30.2	13.4
38140 (mg/kg)	#47	18.8	72	1202

G.1 PTL RESULTS - LAB QA/QC RESULTS

Princeton Service Center
U.S. Route 1
(609) 452-9050
Tlx-84-3842

princeton testing laboratory

Job # 37738
5-16-85

	MDL	#1	#2	#3	#4	#5
				ug/kg		
Chloromethane	20	ND	ND	ND	ND	ND
Bromomethane	100	ND	ND	ND	ND	ND
Dichlorodifluoromethane	50	ND	ND	ND	ND	ND
Vinyl Chloride	20	4400	230	110	270	2600
Chloroethane	20	ND	ND	ND	ND	ND
Methylene chloride	50	4100	4800	570	3600	3700
Trichlorofluoromethane	50	2100	1000	270	880	1400
1,1-dichloroethene	10	ND	ND	ND	ND	ND
1,1-dichloroethane	10	ND	ND	ND	ND	ND
trans-1,2-dichloroethene	10	ND	ND	ND	ND	ND
Chloroform	20	340	200	140	ND	ND
1,2-dichloroethane	10	ND	ND	ND	ND	ND
1,1,1-trichloroethane	20	ND	ND	ND	ND	ND
Carbon tetrachloride	20	ND	ND	ND	ND	ND
Bromodichloromethane	20	ND	ND	ND	ND	ND
1,2-dichloropropane	10	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	50	ND	ND	ND	ND	ND
Trichloroethene	20	50	66	ND	54	ND
Dibromochloromethane	20	ND	ND	ND	ND	ND
1,1,2-trichloroethane	50	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	50	ND	ND	ND	ND	ND
2-chloroethylvinylether	50	ND	ND	ND	ND	ND
Bromoform	100	ND	ND	ND	ND	ND
1,1,2,2-tetrachloroethane	100	ND	ND	ND	ND	ND
Tetrachloroethene	20	1200	240	ND	120	72
Benzene	10	330	360	200	510	590
Toluene	10	750	1200	260	1700	870
Chlorobenzene	10	ND	ND	ND	ND	ND
Ethylbenzene	10	15	380	ND	150	10
1,3-dichlorobenzene	10	ND	ND	ND	ND	ND
1,2-dichlorobenzene	10	ND	ND	ND	ND	ND
1,4-dichlorobenzene	10	460	890	ND	1200	480
Unknowns (number of)		(4)	(4)	(2)	(4)	(9)

ND=not detected

Gene Dennsion, PhD,CIH
Technical Director

GD:mm

princeton testing laboratory

DATE: June 14, 1935

TO: Fred C. Hart Associates
530 Fifth Ave.
New York, NY 10036

Att: Jim Meck

JOB NO. 37733

AUTHORIZATION:

SAMPLE: Soil - 12

REPORT OF ANALYSIS

PRIORITY POLLUTANTS

mg/kg

	#7	#8	#9	#10	#11	#12
Beryllium	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5
Cadmium	1.3	< .5	1.2	< .5	.65	.55
Chromium	60.5	15.8	44.5	16.8	29.0	26.2
Copper	46.0	5.0	24.0	1.7	7.1	8.9
Nickel	232	29.7	161	15.8	66.5	49.6
Lead	275	26.3	249	11.1	199	201
Zinc	232	29.7	161	15.7	66.5	49.6
Arsenic	< 1.5	< 1.5	< 1.5	< 1.5	<1.5	< 1.5
Silver	2.1	.55	1.9	< .5	.70	.50
Antimony	193	92.5	163	71.0	150	155
Selenium	< .25	< .25	.48	< .25	< .25	< .25
Thallium	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5
Mercury	.12	<.05	.05	< .05	< .05	< .05
Cyanide	< 0.5	< 0.5	< 0.5	3.5	2.1	< 0.5
Phenols	14	< 5.5	< 5.5	< 5.5	< 5.5	< 5.5

Elina A. Alinea, Manager
Water, Waste Water & Microbiology

AA/rk

Princeton Testing Laboratory
U.S. Route 1
Princeton Service Center
(609) 452 9050
P.O. Box 3108, Princeton, N.J. 08540

QUALITY CONTROL REPORT

Duplicate Analysis

JOB NO. 37738
ANALYST: JG
DATE: 5-16-85
MATRIX: PE/MW
METHOD: EPA 601

COMPOUND		CONCENTRATION (ug/l)		Relative Percent Difference (RPD)*
Sample ID	COMPOUND NAME	Run 1 (D_1)	Run 2 (D_2)	
#6	Vinyl Chloride	1000	570	55
	Methylene chloride	720	480	40
	Trichlorofluoromethane	1200	62	180
	Benzene	250	460	59
	Toluene	590	584	1.0
	Ethylbenzene	58	55	5.3
	1,4-dichlorobenzene	230	250	8.3
	unknowns (number of)	(5)	(5)	NA

*RPD = $\left[\frac{(D_1 - D_2)}{(D_1 + D_2)/2}\right] \times 100$

Princeton Testing Laboratory

U.S. Route 1
Princeton Service Center
(609) 452 9050

P.O. Box 3108, Princeton, N.J. 08540

QUALITY CONTROL REPORT

Matrix Spike Analysis

JOB NO. 37738
ANALYST: JG
DATE: 5-16-85
MATRIX: PE/MW
METHOD: EPA 601

COMPOUND					%
Sample ID	COMPOUND NAME	Sample Result (SR)	Spiked Sample Result (SSR)	Spike Added (SA)	Recovery*
#12	Trichloroethylene	ND	99	111	89

*% Recovery = $\frac{(SSR - SR)}{(SA)} \times 100$

Princeton Service Center
U.S. Route 1
(609) 452-9050
Tlx-84-3942

princeton testing laboratory

Job #37893
5-14-85

	Detection Limit	#13	#14	#15	#16	#17
				ug/kg		
Chloromethane	20	ND	ND	ND	ND	ND
Bromomethane	100	ND	ND	ND	ND	ND
Dichlorodifluoromethane	50	ND	ND	ND	ND	ND
Vinyl chloride	20	2800	570	2500	650	550
Chloroethane	20	ND	ND	ND	ND	ND
Methylene chloride	50	440	ND	360	440	610
Trichlorofluoromethane	50	ND	300	530	190	360
1,1-dichloroethene	10	ND	ND	ND	ND	ND
1,1-dichloroethane	10	ND	ND	ND	ND	ND
trans-1,2-dichloroethene	10	950	ND	1400	200	ND
Chloroform	20	ND	ND	ND	ND	ND
1,2-dichloroethane	10	ND	ND	ND	ND	ND
1,1,1-trichloroethane	20	ND	ND	ND	ND	ND
Carbon tetrachloride	20	ND	ND	ND	ND	ND
Bromodichloromethane	20	ND	ND	ND	ND	ND
1,2-dichloropropane	10	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	50	ND	ND	ND	ND	ND
Trichloroethene	20	ND	ND	ND	ND	620
Dibromochloromethane	20	ND	ND	ND	ND	ND
1,1,2-trichloroethane	50	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	50	ND	ND	ND	ND	ND
2-chloroethylvinylether	50	ND	ND	ND	ND	ND
Bromoform	100	ND	ND	ND	ND	ND
1,1,2,2-tetrachloroethane	100	ND	ND	ND	ND	ND
Tetrachloroethene	20	ND	ND	ND	ND	530
Benzene	10	490	210	630	990	220
Toluene	10	130	290	170	100	650
Chlorobenzene	10	ND	ND	ND	ND	ND
Ethylbenzene	10	ND	ND	ND	ND	30
1,3-dichlorobenzene	10	ND	ND	ND	ND	ND
1,2-dichlorobenzene	10	ND	ND	ND	ND	ND
1,4-dichlorobenzene	10	ND	160	ND	180	750
Unknowns (number of)		(10)	(9)	(9)	(8)	(11)

ND=not detected

Gene Dennison, PhD, CIH
Technical Director

JG:na

APPENDIX I

BIOGRAPHIES OF KEY PERSONNEL

RECEIVED MAY 2 3 1985

Princeton Service Center
U.S. Route 1
(609) 452-9060
Tlx-84-3942

princeton testing laboratory

Job #37893
5-14-85

	#18	#19
	ug/kg	
Chloromethane	ND	ND
Bromomethane	ND	ND
Dichlorodifluoromethane	ND	ND
Vinyl chloride	770	380
Chloroethane	ND	ND
Methylene chloride	96	300
Trichlorofluoromethane	130	100
1,1-dichloroethene	ND	ND
1,1-dichloroethane	ND	ND
trans-1,2-dichloroethene	ND	ND
Chloroform	ND	ND
1,2-dichloroethane	ND	ND
1,1,1-trichloroethane	ND	ND
Carbon tetrachloride	ND	ND
Bromodichloromethane	ND	ND
1,2-dichloropropane	ND	ND
trans-1,3-dichloropropene	ND	ND
Trichloro-thene	ND	ND
Dibromochloromethane	ND	ND
1,1,2-trichloroethane	ND	ND
cis-1,3-dichloropropene	ND	ND
2-chloroethylvinylether	ND	ND
Bromoform	ND	ND
1,1,2,2-tetrachloroethane	ND	ND
Tetrachloroethene	ND	ND
Benzene	140	160
Toluene	62	230
Chlorobenzene	ND	ND
Ethylbenzene	ND	ND
1,3-dichlorobenzene	ND	ND
1,2-dichlorobenzene	ND	ND
1,4-dichlorobenzene	ND	ND
Unknowns (number of)	(10)	(8)

ND=not detected

Gene Dennison,PhD,CIH
Technical Director

JG:na

princeton testing laboratory

RECEIVED MAY 20 1985

DATE: 5-14-85

TO: Fred C. Hart Associates
530 Fifth Ave
New York NY 10036

ATT: Jim Meck

JOB NO. 37893

AUTHORIZATION: verbal

SAMPLE: soil

REPORT OF ANALYSIS

ACID EXTRACTS

	Detection Limit	Stations 13	14	15	16
		micrograms/gram			
2-Chlorophenol	1	ND	ND	ND	ND
2,4-Dichlorophenol	1	ND	ND	ND	ND
2,4-Dimethylphenol	1	ND	ND	ND	ND
4,6-Dinitro-o-cresol	10	ND	ND	ND	ND
2,4-Dinitrophenol	10	ND	ND	ND	ND
2-Nitrophenol	1	ND	ND	ND	ND
4-Nitrophenol	1	ND	ND	ND	ND
p-chloro-m-cresol	1	ND	ND	ND	ND
Pentachlorophenol	1	ND	ND	ND	ND
Phenol	1	ND	ND	ND	ND
2,4,6-Trichlorophenol	1	ND	ND	ND	ND

Gene Dennison,PhD,CIH
Technical Director

MK:na

princeton testing laboratory

DATE: May 16, 1985

TO: Fred C. Hart Associates
530 Fifth Ave
New York NY 10036

ATT: Jim Meck

JOB NO. 37893

AUTHORIZATION: verbal

SAMPLE: soil

REPORT OF ANALYSIS

ACID EXTRACTS

	17	18	19
	micrograms/gram		
2-Chlorophenol	ND	ND	ND
2,4-Dichlorophenol	ND	ND	ND
2,4-Dimethylphenol	ND	ND	ND
4,6-Dinitro-o-cresol	ND	ND	ND
2,4-Dinitrophenol	ND	ND	ND
2-Nitrophenol	ND	ND	ND
4-Nitrophenol	ND	ND	ND
p-chloro-m-cresol	ND	ND	ND
Pentachlorophenol	ND	ND	ND
Phenol	ND	ND	ND
2,4,6-Trichlorophenol	ND	ND	ND

Gene Dennison,PhD,CIH
Technical Director

MK:na

princeton testing laboratory

DATE: 5-14-85

TO: Fred C. Hart Associates
530 Fifth Ave
New York NY 10036

ATT: Jim Meck

JOB NO. 37893

AUTHORIZATION: verbal

SAMPLE: soil

REPORT OF ANALYSIS

BASE/NEUTRAL EXTRACTS

	Detection Limit	Stations 13	14	15	16
		micrograms/gram			
Acenaphthene	1	ND	ND	ND	ND
Acenaphthylene	1	ND	ND	ND	ND
Anthracene	1	ND	ND	ND	ND
Benzidine	10	ND	ND	ND	ND
Benzo(a)anthracene	1	ND	ND	ND	ND
Benzo(a)pyrene	1	ND	ND	ND	ND
3,4-Benzofluoranthene	1	ND	ND	ND	ND
Benzo(ghi)perylene	3	ND	ND	ND	ND
Benzo(k)fluoranthene	1	ND	ND	ND	ND
bis(2-chloroethoxy)methane	1	ND	ND	ND	ND
bis(2-chloroethyl)ether	1	ND	ND	ND	ND
bis(2-chloroisopropyl)ether	1	ND	ND	ND	ND
bis(2-ethylhexyl)phthalate	1	ND	ND	ND	ND
4-bromophenyl phenyl ether	1	ND	ND	ND	ND
Butylbenzyl phthalate	1	ND	ND	ND	ND
2-Chloronaphthalene	1	ND	ND	ND	ND
4-Chlorophenyl phenyl ether	1	ND	ND	ND	ND
Chrysene	1	ND	ND	ND	ND
Dibenzo(a,h)anthracene	3	ND	ND	ND	ND
1,2-Dichlorobenzene	1	ND	ND	ND	ND
1,3-Dichlorobenzene	1	ND	ND	ND	ND
1,4-Dichlorobenzene	1	ND	ND	ND	ND
3,3'-Dichlorobenzidine	1	ND	ND	ND	ND
Diethyl phthalate	1	ND	ND	ND	ND
Dimethyl phthalate	1	ND	ND	ND	ND
Di-n-butyl phthalate	1	ND	ND	ND	ND
2,4-Dinitrotoluene	1	ND	ND	ND	ND
2,6-Dinitrotoluene	1	ND	ND	ND	ND
Di-n-octyl phthalate	1	ND	ND	ND	ND
1,2-diphenylhydrazine (as azobenzene)	1	ND	ND	ND	ND
Fluoranthene	1	ND	ND	ND	ND

Gene Dennison, PhD, CIH
Technical Director

MK:na

princeton
testing
laboratory

DATE: 5-14-85

TO: Fred C. Hart Associates
530 Fifth Ave
New York NY 10036

JOB NO. 37893

AUTHORIZATION: verbal

ATT: Jim Meck

SAMPLE: soil

REPORT OF ANALYSIS

BASE/NEUTRAL EXTRACTS (con't)	Detection Limit	Stations 13	14	15	16	micrograms/gram
Fluorene	1	ND	ND	ND	ND	
Hexachlorobenzene	1	ND	ND	ND	ND	
Hexchlorobutadiene	1	ND	ND	ND	ND	
Hexachlorocyclopentadiene	1	ND	ND	ND	ND	
Hexachloroethane	1	ND	ND	ND	ND	
Ideno(1,2,3-cd)pyrene	3	ND	ND	ND	ND	
Isophorone	1	ND	ND	ND	ND	
Naphthalene	1	ND	ND	ND	ND	
Nitrobenzene	1	ND	ND	ND	ND	
N-nitrosodimethylamine	1	ND	ND	ND	ND	
N-nitrosodi-n-propylamine	1	ND	ND	ND	ND	
N-nitrosodiphenylamine	1	ND	ND	ND	ND	
Phenanthrene	1	ND	ND	ND	ND	
Pyrene	1	ND	ND	ND	ND	
1,2,4-Trichlorobenzene	1	ND	ND	ND	ND	

Gene Dennison,PhD,CIH
Technical Director

MK:na

princeton testing laboratory

RECEIVED MAY 20 1985

DATE: 5-17-85

TO: Fred C. Hart Associates
530 Fifth Ave
New York NY 10036

ATT: Jim Meck

JOB NO. 37893

AUTHORIZATION: verbal

SAMPLE: soil

REPORT OF ANALYSIS

BASE/NEUTRAL EXTRACTS

	Stations 17	18	19
Acenaphthene	9.8	ND	ND
Acenaphthylene	ND	ND	ND
Anthracene/phenanthrene	530	ND	ND
Benzidine	3000	ND	ND
Benzo(a)anthracene	420	ND	ND
Benzo(a)pyrene	880	ND	ND
3,4-Benzofluoranthene/benzo(k)fluoranthene	350	ND	ND
Benzo(ghi)perylene	140	ND	ND
Benzo(k)fluoranthene	see 3,4 benzofluoranthene		
bis(2-chloroethoxy)methane	ND	ND	ND
bis(2-chloroethyl)ether	ND	ND	ND
bis(2-chloroisopropyl)ether	ND	ND	ND
bis(2-ethylhexyl)phthalate	ND	ND	ND
4-bromophenyl phenyl ether	ND	ND	ND
Butylbenzyl phthalate	ND	ND	ND
2-Chloronaphthalene	ND	ND	ND
4-Chlorophenyl phenyl ether	ND	ND	ND
Chrysene	500	ND	ND
Dibenzo(a,h)anthracene	74	ND	ND
1,2-Dichlorobenzene	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND
3,3'-Dichlorobenzidine	ND	ND	ND
Diethyl phthalate	ND	ND	ND
Dimethyl phthalate	ND	ND	ND
Di-n-butyl phthalate	ND	ND	ND
2,4-Dinitrotoluene	ND	ND	ND
2,6-Dinitrotoluene	ND	ND	ND
Di-n-octyl phthalate	ND	ND	ND
1,2-diphenylhydrazine (as azobenzene)	ND	ND	ND
Fluoranthene	690	ND	ND

Gene Dennison.PhD,CIH
Technical Director

MK:na

princeton
testing
laboratory

DATE: May 16, 1985

TO:
Fred C. Hart Associates
530 Fifth Ave
New York NY 10036

ATT: Jim Meck

JOB NO. 37893

AUTHORIZATION: verbal

SAMPLE: soil

REPORT OF ANALYSIS

BASE/NEUTRAL EXTRACTS (con't)

	17	18	19
	micrograms/gram		
Fluorene	ND	ND	ND
Hexachlorobenzene	690	ND	ND
Hexchlorobutadiene	ND	ND	ND
Hexachlorocyclopentadiene	ND	ND	ND
Hexachloroethane	ND	ND	ND
Ideno(1,2,3-cd)pyrene	160	ND	ND
Isophorone	ND	ND	ND
Naphthalene	ND	ND	ND
Nitrobenzene	ND	ND	ND
N-nitrosodimethylamine	ND	ND	ND
N-nitrosodi-n-propylamine	ND	ND	ND
N-nitrosodiphenylamine	ND	ND	ND
Phenanthrene	see anthracene		
Pyrene	570	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND

Gene Dennison,PhD,CIH
Technical Director

MK:na

princeton testing laboratory

RECEIVED MAY 20 1985

DATE: 5-14-85

JOB NO. 37893

AUTHORIZATION: verbal

SAMPLE: soil

TO: Fred C. Hart Associates
530 Fifth Ave
New York NY 10036

ATT: Jim Meck

REPORT OF ANALYSIS

PESTICIDES AND PCB'S

G 104 AF/GE 83

	Detection Limit	Stations 13	14	15	16	17	18	19
Aldrin	1	ND	ND	ND	ND	ND	ND	ND
BHC,Alpha	1	ND	ND	ND	ND	ND	ND	ND
BHC,Beta	1	ND	ND	ND	ND	ND	ND	ND
BHC,Gamma	1	ND	ND	ND	ND	ND	ND	ND
BHC,Delta	1	ND	ND	ND	ND	ND	ND	ND
Chlordane	1	ND	ND	ND	ND	ND	ND	ND
4,4'DDT	1	ND	ND	ND	ND	ND	ND	ND
4,4'DDE	1	ND	ND	ND	ND	ND	ND	ND
4,4'DDD	1	ND	ND	ND	ND	ND	ND	ND
Dieldrin	1	ND	ND	ND	ND	ND	ND	ND
Endosulfan-alpha	1	ND	ND	ND	ND	ND	ND	ND
Endosulfan-beta	1	ND	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	1	ND	ND	ND	ND	ND	ND	ND
Endrin	1	ND	ND	ND	ND	ND	ND	ND
Endrin Aldehyde	1	ND	ND	ND	ND	ND	ND	ND
Heptachlor	1	ND	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	1	ND	ND	ND	ND	ND	ND	ND
PCB-1242	2	ND	ND	ND	ND	ND	ND	ND
PCB-1254	2	ND	ND	ND	ND	ND	ND	ND
PCB-1221	2	ND	ND	ND	ND	ND	ND	ND
PCB-1232	2	ND	ND	ND	ND	ND	ND	ND
PCB-1248	2	ND	ND	ND	ND	ND	ND	ND
PCB-1260	2	ND	ND	ND	ND	ND	ND	ND
PCB-1016	2	ND	ND	ND	ND	ND	ND	ND
Toxaphene	2	ND	ND	ND	ND	ND	ND	ND

Gene Dennison,PhD,CIH
Technical Director

MK:na

princeton testing laboratory

RECEIVED MAY 20 1985

DATE: 5-13-85

JOB NO. 37893

AUTHORIZATION: verbal

SAMPLE: soils

TO: Fred C. Hart Associates
530 Fifth Ave
New York NY 10036

ATT: Jim Meck

REPORT OF ANALYSIS

G 104 AF/GE 83
Station

	13	14	15	16	17	18
	mg/kg dry basis					
Beryllium	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Cadmium	< 2.0	2.0	< 2.0	< 2.0	5.0	< 2.0
Chromium	5.0	28	10	4.0	23	4.0
Copper	6.0	18	8.0	5.0	42	3.0
Nickel	10	34	14	10	32	9.0
Lead	17	121	20	10	137	10
Zinc	16	37	18	12	49	10
Arsenic	7.8	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Silver	< 1.0	8.0	< 1.0	< 1.0	5.0	< 1.0
Antimony	85.0	295	170	80.0	440	65.0
Selenium	< .25	< .25	< .25	< .25	< .25	< .25
Thallium	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Mercury	< .050	< .050	.14	< .050	< .050	< .050
Cyanide	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Phenols	< 6.0	< 6.0	< 6.0	< 6.0	8.0	< 6.0

*Results of sample #19 to follow

Edna A. Alinea, Manager
Water, waste water & microbiology

EAA:na

DATE: June 6, 1985

TO: Fred C. Hart Associates
530 Fifth Ave
New York NY 10036

Att: Jim Meck

JOB NO. 38429

AUTHORIZATION: verbal

SAMPLE: soil - 1

REPORT OF ANALYSIS

PRIORITY POLLUTANTS

Sample #19

mg/kg Dry Wt.

Beryllium	< 1.0
Cadmium	< 1.0
Chromium	< 1.0
Copper	< 1.0
Nickel	< 1.0
Lead	< 1.0
Zinc	6.0
Arsenic	<0.01
Silver	< 1.0
Antimony	2.0
Selenium	< .50
Thallium	1.0
Mercury	< .05
Cyanide	< 0.5
Phenols	< 0.1

Edna A. Aliner, Manager
Water, Waste Water & Microbiology

EAA/rk

[redacted] Testing Laboratory

U.S. Route 1
Princeton Service Center
(609) 452-9050

P.O. Box 3108, Princeton, N.J. 08540

QUALITY CONTROL REPORT

Duplicate Analysis

JOB NO. 37893
ANALYST. JG
DATE: 5-14-85
MATRIX: PE/MW
METHOD: EPA 601

COMPOUND		CONCENTRATION (ug/1)		Relative Percent Difference (RPD)*
Sample ID	COMPOUND NAME	Run 1 (D_1)	Run 2 (D_2)	
#14	Vinyl Chloride	570	320	56
	Trichlorofluoromethane	300	190	45
	Benzene	210	211	1.0
	Toluene	290	250	14
	1,4-dichlorobenzene	160	300	60

*RPD = $\left[\frac{(D_1 - D_2)}{(D_1 + D_2)/2}\right] \times 100$

Princeton Testing Laboratory

U.S. Route 1
Princeton Service Center
(609) 452-9050

P.O. Box 3108, Princeton, N.J. 08540

QUALITY CONTROL REPORT

Matrix Spike Analysis

JOB NO. 37893
ANALYST: JG
DATE: 5-14-85
MATRIX: PE/MW
METHOD: EPA 601

COMPOUND					
Sample ID	COMPOUND NAME	Sample Result (SR)	Spiked Sample Result (SSR)	Spike Added (SA)	% Recovery*
#19	Trichloroethylene	ND	96	111	86

*% Recovery = $\frac{(SSR - SR)}{(SA)} \times 100$

Princeton Service Center
U.S. Route 1
(609) 452-9060
Tlx 84-3942

princeton testing laboratory

Job #38041
6-17-85

	#20	#21	#22	#23	#24	#25
			ug/gm			
Chloromethane	ND	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ND	ND	ND	ND	ND	ND
Vinyl Chloride	0.94	1.65	0.22	1.08	0.35	2.11
Chloroethane	ND	ND	ND	ND	ND	ND
Methylene chloride	ND	0.75	0.11	<.05	ND	0.63
Trichlorofluoromethane	<.05	0.15	0.05	<.05	<.05	0.13
1,1-dichloroethene	ND	ND	ND	ND	ND	ND
1,1-dichloroethane	0.19	ND	ND	ND	ND	ND
trans-1,2-dichloroethene	ND	ND	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND	ND
1,2-dichloroethane	ND	ND	ND	ND	ND	ND
1,1,1-trichloroethane	0.09	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND
1,2-dichloropropane	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	ND	ND	ND	ND	ND	ND
Trichloroethene	0.06	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND
1,1,2-trichloroethane	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	ND	ND	ND	ND	ND	ND
2-chloroethylvinylether	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND
1,1,2,2-tetrachloroethane	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.20	0.08	0.10	ND	ND	0.07
Benzene	0.16	0.28	0.13	0.53	0.19	0.27
Toluene	ND	0.13	0.10	0.04	0.02	0.11
Chlorobenzene	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND
1,3-dichlorobenzene	ND	ND	ND	ND	ND	ND
1,2-dichlorobenzene	ND	ND	ND	ND	ND	ND
1,4-dichlorobenzene	0.27	ND	ND	ND	ND	ND
Xylenes	0.07	0.05	0.07	ND	ND	0.06

ND=not detected

Jon Gabry, PhD
Asst.Organic Lab Manage

na

testing laboratory

DATE: 6-17-85

TO: Fred C. Hart Associates
530 Fifth Ave
New York NY 10036

JOB NO. 38041

AUTHORIZATION: verbal

SAMPLE: water - 18

REPORT OF ANALYSIS

ACID EXTRACTS

	Detection Limit	#20	#21	#22	#23	#24	#25
		micrograms/gram					
2-Chlorophenol	1	ND	ND	ND	ND	ND	ND
2,4-Dichlorophenol	1	ND	ND	ND	ND	ND	ND
2,4-Dimethylphenol	1	ND	ND	ND	ND	ND	ND
4,6-Dinitro-o-cresol	10	ND	ND	ND	ND	ND	ND
2,4-Dinitrophenol	10	ND	ND	ND	ND	ND	ND
2-Nitrophenol	1	ND	ND	ND	ND	ND	ND
4-Nitrophenol	1	ND	ND	ND	ND	ND	ND
p-chloro-m-cresol	1	ND	ND	ND	ND	ND	ND
Pentachlorophenol	1	ND	ND	ND	ND	ND	ND
Phenol	1	ND	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	1	ND	ND	ND	ND	ND	ND

Jon Gabry, PhD
Asst. Organic Lab Manager

na

testing laboratory

DATE: 6-17-85

TO: Fred C. Hart Associates
530 Fifth Ave
New York NY 10036

JOB NO. 38041

AUTHORIZATION: verbal

SAMPLE: water - 18

REPORT OF ANALYSIS

BASE/NEUTRAL EXTRACTS

	Detection Limit	micrograms/gram #20	#21	#22	#23	#24	#25
Acenaphthene	1	ND	ND	ND	ND	ND	ND
Acenaphthylene	1	ND	ND	ND	ND	ND	ND
Anthracene	1	ND	ND	ND	ND	ND	ND
Benzidine	10	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	1	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	1	ND	ND	ND	ND	ND	ND
3,4-Benzofluoranthene	1	ND	ND	ND	ND	ND	ND
Benzo(ghi)perylene	3	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	1	ND	ND	ND	ND	ND	ND
bis(2-chloroethoxy)methane	1	ND	ND	ND	ND	ND	ND
bis(2-chloroethyl)ether	1	ND	ND	ND	ND	ND	ND
bis(2-chloroisopropyl)ether	1	ND	ND	ND	ND	ND	ND
bis(2-ethylhexyl)phthalate	1	ND	ND	ND	ND	ND	ND
4-bromophenyl phenyl ether	1	ND	ND	ND	ND	ND	ND
Butylbenzyl phthalate	1	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	1	ND	ND	ND	ND	ND	ND
4-Chlorophenyl phenyl ether	1	ND	ND	ND	ND	ND	ND
Chrysene	1	ND	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	3	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	1	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	1	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	1	ND	ND	ND	ND	ND	ND
3,3'-Dichlorobenzidine	1	ND	ND	ND	ND	ND	ND
Diethyl phthalate	1	ND	ND	ND	ND	ND	ND
Dimethyl phthalate	1	ND	ND	ND	ND	ND	ND
Di-n-butyl phthalate	1	ND	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	1	ND	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	1	ND	ND	ND	ND	ND	ND
Di-n-octyl phthalate	1	ND	ND	ND	ND	ND	ND
1,2-diphenylhydrazine (as azobenzene)	1	ND	ND	ND	ND	ND	ND
Fluoranthene	1	ND	ND	ND	ND	ND	ND

Jon Gabry,PhD
Asst.Organic Lab Manager

na

princeton testing laboratory

DATE: 6-17-85

TO: Fred C. Hart Associates
530 Fifth Ave
New York NY 10036

JOB NO. 38041

AUTHORIZATION: verbal

SAMPLE: water - 18

REPORT OF ANALYSIS

BASE/NEUTRAL EXTRACTS (con't)

	Detection Limit	micrograms/gram #20	#21	#22	#23	#24	#25
Fluorene	1	ND	ND	ND	ND	ND	ND
Hexachlorobenzene	1	ND	ND	ND	ND	ND	ND
Hexchlorobutadiene	1	ND	ND	ND	ND	ND	ND
Hexachlorocyclopentadiene	1	ND	ND	ND	ND	ND	ND
Hexachloroethane	1	ND	ND	ND	ND	ND	ND
Ideno(1,2,3-cd)pyrene	3	ND	ND	ND	ND	ND	ND
Isophorone	1	ND	ND	ND	ND	ND	ND
Naphthalene	1	ND	ND	ND	ND	ND	ND
Nitrobenzene	1	ND	ND	ND	ND	ND	ND
N-nitrosodimethylamine	1	ND	ND	ND	ND	ND	ND
N-nitrosodi-n-propylamine	1	ND	ND	ND	ND	ND	ND
N-nitrosodiphenylamine	1	ND	ND	ND	ND	ND	ND
Phenanthrene	1	ND	ND	ND	ND	ND	ND
Pyrene	1	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	1	ND	ND	ND	ND	ND	ND

Jon Gabry,PhD
Asst.Organic Lab Manager

na

princeton testing laboratory

DATE: 6-17-85

TO:
Fred C. Hart Associates
530 Fifth Ave
New York NY 10036

JOB NO. 38041

AUTHORIZATION: verbal

SAMPLE: water - 18

REPORT OF ANALYSIS

PESTICIDES AND PCB'S

	#20	#21	#22	#23	#24	#25
				ug/g		
Aldrin	ND	ND	ND	ND	ND	ND
BHC,Alpha	ND	ND	ND	ND	ND	ND
BHC,Beta	ND	ND	ND	ND	ND	ND
BHC,Gamma	ND	ND	ND	ND	ND	ND
BHC,Delta	ND	ND	ND	ND	ND	ND
Chlordane	ND	ND	ND	ND	ND	ND
4,4'DDT	ND	ND	ND	ND	ND	ND
4,4'DDE	ND	ND	ND	ND	ND	ND
4,4'DDD	ND	ND	ND	ND	ND	ND
Dieldrin	ND	ND	ND	ND	ND	ND
Endosulfan-alpha	ND	ND	ND	ND	ND	ND
Endosulfan-beta	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	ND	ND	ND	ND	ND	ND
Endrin	ND	ND	ND	ND	ND	ND
Endrin Aldehyde	ND	ND	ND	ND	ND	ND
Heptachlor	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	ND	ND	ND	ND	ND	ND
PCB-1242	ND	ND	ND	ND	ND	ND
PCB-1254	ND	ND	ND	ND	ND	ND
PCB-1221	ND	ND	ND	ND	ND	ND
PCB-1232	ND	ND	ND	ND	ND	ND
PCB-1248	ND	ND	ND	ND	ND	ND
PCB-1260	ND	ND	ND	ND	ND	ND
PCB-1016	ND	ND	ND	ND	ND	ND
Toxaphene	ND	ND	ND	ND	ND	ND

Detection limit for all parameters is 1

Jon Gabry,PhD
Asst.Organic Lab Manage

na

princeton testing laboratory

DATE: 6-17-85

JOB NO. 38041

AUTHORIZATION: verbal

SAMPLE: water - 18

TO:
Fred C Hart Associates
530 Fifth Ave
New York NY 10036

REPORT OF ANALYSIS

PRIORITY POLLUTANTS

	#20	#21	#22	#23	#24	#25
			mg/l			
Beryilium	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Cadmium	< .50	< .50	< .50	< .50	< .50	< .50
Chromium	68.5	21.0	43.5	44.5	40.5	32.5
Copper	16.5	3.0	8.0	6.5	6.0	7.0
Nickel	25.4	7.35	14.0	13.0	18.5	10.0
Lead	16.2	< 1.0	8.0	3.5	2.9	< 1.0
Zinc	130	15.2	27.0	29.5	26.0	19.5
Arsenic	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Silver	.70	< .50	< .50	< .50	1.10	< .50
Antimony	347	69.5	194	199	269	123
Selenium	< .25	< .25	< .25	< .25	< .25	< .25
Thallium	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Mercury	< .05	< .05	< .05	< .05	< .05	< .05
Cyanide	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Phenols	5.5	< 5.5	7.0	8.0	< 5.5	< 5.5

Edna A. Alinea, Manager
Water, waste water & microbiolog

EAA:na

Princeton Service Center
U.S. Route 1
(609) 452-9060
Tlx-84-3942

princeton testing laboratory

Job #38041
6-17-85

	Detection Limit	#26	#27	#28	#29	#30	#31
				ug/gm			
Chloromethane	.02	ND	ND	ND	ND	ND	ND
Bromomethane	.10	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	.05	ND	ND	ND	ND	ND	ND
Vinyl Chloride	.02	2.34	0.45	2.68	0.74	1.31	1.92
Chloroethane	.02	ND	ND	ND	ND	ND	ND
Methylene chloride	.05	0.38	0.40	0.15	0.27	0.57	0.19
Trichlorofluoromethane	.05	0.11	<.05	<.05	<.05	0.13	0.07
1,1-dichloroethene	.01	ND	ND	ND	ND	ND	ND
1,1-dichloroethane	.01	ND	ND	ND	ND	ND	ND
trans-1,2-dichloroethene	.01	ND	ND	ND	ND	ND	ND
Chloroform	.02	ND	ND	ND	ND	ND	ND
1,2-dichloroethane	.01	ND	ND	ND	ND	ND	ND
1,1,1-trichloroethane	.02	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	.02	ND	ND	ND	ND	ND	ND
Bromodichloromethane	.02	ND	ND	ND	ND	ND	ND
1,2-dichloropropane	.01	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	.05	ND	ND	ND	ND	ND	ND
Trichloroethene	.02	ND	0.04	ND	ND	ND	ND
Dibromochloromethane	.02	ND	ND	ND	ND	ND	ND
1,1,2-trichloroethane	.05	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	.05	ND	ND	ND	ND	ND	ND
2-chloroethylvinylether	.05	ND	ND	ND	ND	ND	ND
Bromoform	.10	ND	ND	ND	ND	ND	ND
1,1,2,2-tetrachloroethane	.10	ND	ND	ND	ND	ND	ND
Tetrachloroethene	.02	0.09	<.02	<.02	<.02	0.07	<.02
Benzene	.01	0.26	0.19	0.23	0.18	0.26	0.20
Toluene	.01	0.08	0.06	0.17	0.13	0.40	0.06
Chlorobenzene	.01	ND	ND	ND	ND	ND	ND
Ethylbenzene	.01	ND	ND	ND	ND	ND	ND
1,3-dichlorobenzene	.01	ND	ND	ND	ND	ND	ND
1,2-dichlorobenzene	.01	ND	ND	ND	ND	ND	ND
1,4-dichlorobenzene	.01	ND	ND	ND	ND	ND	ND
Xylenes	.01	ND	ND	ND	ND	0.16	ND

ND=not detected

Jon Gabry, PhD, CIH
Asst. Organic Lab Manag

na

princeton testing laboratory

DATE: 6-17-85

JOB NO. 38041

AUTHORIZATION: verbal

SAMPLE: water - 18

TO:
Fred C. Hart Associates
530 Fifth Ave
New York NY 10036

REPORT OF ANALYSIS

ACID EXTRACTS

	Detection Limit	#26	#27	#28	#29	#30	#31
		micrograms/gram					
2-Chlorophenol	1	ND	ND	ND	ND	ND	ND
2,4-Dichlorophenol	1	ND	ND	ND	ND	ND	ND
2,4-Dimethylphenol	1	ND	ND	ND	ND	ND	ND
4,6-Dinitro-o-cresol	10	ND	ND	ND	ND	ND	ND
2,4-Dinitrophenol	10	ND	ND	ND	ND	ND	ND
2-Nitrophenol	1	ND	ND	ND	ND	ND	ND
4-Nitrophenol	1	ND	ND	ND	ND	ND	ND
p-chloro-m-cresol	1	ND	ND	ND	ND	ND	ND
Pentachlorophenol	1	ND	ND	ND	ND	ND	ND
Phenol	1	ND	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	1	ND	ND	ND	ND	ND	ND

Jon Gabry,PhD
Asst.Organic Lab Manager

na

princeton
testing
laboratory

DATE: 6-17-85

JOB NO. 38041

AUTHORIZATION: verbal

TO: Fred C. Hart Associates
530 Fifth Ave
New York NY 10036

SAMPLE: water - 18

REPORT OF ANALYSIS

BASE/NEUTRAL EXTRACTS

	Detection Limit	#26	#27	#28
		micrograms/gram		
Acenaphthene	1	ND	ND	ND
Acenaphthylene	1	ND	ND	ND
Anthracene	1	ND	ND	ND
Benzidine	10	ND	ND	ND
Benzo(a)anthracene	1	ND	ND	ND
Benzo(a)pyrene	1	ND	ND	ND
3,4-Benzofluoranthene	1	ND	ND	ND
Benzo(ghi)perylene	3	ND	ND	ND
Benzo(k)fluoranthene	1	ND	ND	ND
bis(2-chloroethoxy)methane	1	ND	ND	ND
bis(2-chloroethyl)ether	1	ND	ND	ND
bis(2-chloroisopropyl)ether	1	ND	ND	ND
bis(2-ethylhexyl)phthalate	1	ND	ND	ND
4-bromophenyl phenyl ether	1	ND	ND	ND
Butylbenzyl phthalate	1	ND	ND	ND
2-Chloronaphthalene	1	ND	ND	ND
4-Chlorophenyl phenyl ether	1	ND	ND	ND
Chrysene	1	ND	ND	ND
Dibenzo(a,h)anthracene	3	ND	ND	ND
1,2-Dichlorobenzene	1	ND	ND	ND
1,3-Dichlorobenzene	1	ND	ND	ND
1,4-Dichlorobenzene	1	ND	ND	ND
3,3'-Dichlorobenzidine	1	ND	ND	ND
Diethyl phthalate	1	ND	ND	ND
Dimethyl phthalate	1	ND	ND	ND
Di-n-butyl phthalate	1	ND	ND	ND
2,4-Dinitrotoluene	1	ND	ND	ND
2,6-Dinitrotoluene	1	ND	ND	ND
Di-n-octyl phthalate	1	ND	ND	ND
1,2-diphenylhydrazine (as azobenzene)	1	ND	ND	ND
Fluoranthene	1	ND	ND	ND

Jon Gabry, PhD
Asst. Organic Lab Manager

na

testing
laboratory

DATE: 6-17-85

TO:

Fred C. Hart Associates
530 Fifth Ave
New York NY 10036

JOB NO. 38041

AUTHORIZATION: verbal

SAMPLE: water - 18

REPORT OF ANALYSIS

BASE/NEUTRAL EXTRACTS (con't)

	Detection Limit	micrograms/gram #26	#27	#28
Fluorene	1	ND	ND	ND
Hexachlorobenzene	1	ND	ND	ND
Hexchlorobutadiene	1	ND	ND	ND
Hexachlorocyclopentadiene	1	ND	ND	ND
Hexachloroethane	1	ND	ND	ND
Ideno(1,2,3-cd)pyrene	3	ND	ND	ND
Isophorone	1	ND	ND	ND
Naphthalene	1	ND	ND	ND
Nitrobenzene	1	ND	ND	ND
N-nitrosodimethylamine	1	ND	ND	ND
N-nitrosodi-n-propylamine	1	ND	ND	ND
N-nitrosodiphenylamine	1	ND	ND	ND
Phenanthrene	1	ND	ND	ND
Pyrene	1	ND	ND	ND
1,2,4-Trichlorobenzene	1	ND	ND	ND

Jon Gabry,PhD
Asst.Organic Lab Manage

SV:na

princeton testing laboratory

DATE: 6-17-85

TO:

Fred C. Hart Associates
530 Fifth Ave
New York NY 10036

JOB NO. 38041

AUTHORIZATION: verbal

SAMPLE: water - 1

REPORT OF ANALYSIS

BASE/NEUTRAL EXTRACTS

	Detection Limit	#29	#30	#31
	micrograms/gram			
Acenaphthene	1	ND	ND	ND
Acenaphthylene	1	ND	ND	ND
Anthracene/Phenanthrene	1	ND	2.5	ND
Benzidine	10	ND	ND	ND
Benzo(a)anthracene		see Chrysene		
Benzo(a)pyrene	1	ND	9.3	ND
3,4-Benzofluoranthene/benzo(k)fluoranthene	1	ND	4.1	ND
Benzo(ghi)perylene	3	ND	1.7	ND
Benzo(k)fluoranthene		see 3,4-benzo fluoranthene		
bis(2-chloroethoxy)methane	1	ND	ND	ND
bis(2-chloroethyl)ether	1	ND	ND	ND
bis(2-chloroisopropyl)ether	1	ND	ND	ND
bis(2-ethylhexyl)phthalate	1	ND	ND	ND
4-bromophenyl phenyl ether	1	ND	ND	ND
Butylbenzyl phthalate	1	ND	ND	ND
2-Chloronaphthalene	1	ND	ND	ND
4-Chlorophenyl phenyl ether	1	ND	ND	ND
Chrysene/benzo(a)anthracene	1	ND	7.4	ND
Dibenzo(a,h)anthracene	3	ND	ND	ND
1,2-Dichlorobenzene	1	ND	ND	ND
1,3-Dichlorobenzene	1	ND	ND	ND
1,4-Dichlorobenzene	1	ND	ND	ND
3,3'-Dichlorobenzidine	1	ND	ND	ND
Diethyl phthalate	1	ND	ND	ND
Dimethyl phthalate	1	ND	ND	ND
Di-n-butyl phthalate	1	ND	ND	ND
2,4-Dinitrotoluene	1	ND	ND	ND
2,6-Dinitrotoluene	1	ND	ND	ND
Di-n-octyl phthalate	1	ND	ND	ND
1,2-diphenylhydrazine (as azobenzene)	1	ND	ND	ND
Fluoranthene	1	ND	4.2	ND

Jon Gabry, PhD
Asst.Organic Lab Mg

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[illegible]
testing
laboratory

DATE 6-17-85

TO: Fred C. Hart Associates
530 Fifth Ave
New York NY 10036

JOB NO. 38041

AUTHORIZATION verbal

SAMPLE water - 18

REPORT OF ANALYSIS

BASE/NEUTRAL EXTRACTS (con't)

	Detection Limit	Micrograms/gram #29	#30	#31
Fluorene	1	ND	ND	ND
Hexachlorobenzene	1	ND	ND	ND
Hexchlorobutadiene	1	ND	ND	ND
Hexachlorocyclopentadiene	1	ND	ND	ND
Hexachloroethane	1	ND	ND	ND
Ideno(1,2,3-cd)pyrene	3	ND	1.6	ND
Isophorone	1	ND	ND	ND
Naphthalene	1	ND	ND	ND
Nitrobenzene	1	ND	ND	ND
N-nitrosodimethylamine	1	ND	ND	ND
N-nitrosodi-n-propylamine	1	ND	ND	ND
N-nitrosodiphenylamine	1	ND	ND	ND
Phenanthrene	see anthracene			
Pyrene	1	ND	3.6	ND
1,2,4-Trichlorobenzene	1	ND	ND	ND

Jon Gabry, PhD
Asst. Organic Lab Manage

na

princeton testing laboratory

DATE: 6-17-85

TO: Fred C. Hart Associates
530 Fifth Ave
New York NY 10036

JOB NO. 38041

AUTHORIZATION: verbal

SAMPLE: water - 18

REPORT OF ANALYSIS

PESTICIDES AND PCB'S

	#25	#26	#27	#28	#29	#30
			ug/g			
Aldrin	ND	ND	ND	ND	ND	ND
BHC,Alpha	ND	ND	ND	ND	ND	ND
BHC,Beta	ND	ND	ND	ND	ND	ND
BHC,Gamma	ND	ND	ND	ND	ND	ND
BHC,Delta	ND	ND	ND	ND	ND	ND
Chlordane	ND	ND	ND	ND	ND	ND
4,4'DDT	ND	ND	ND	ND	ND	ND
4,4'DDE	ND	ND	ND	ND	ND	ND
4,4'DDD	ND	ND	ND	ND	ND	ND
Dieldrin	ND	ND	ND	ND	ND	ND
Endosulfan-alpha	ND	ND	ND	ND	ND	ND
Endosulfan-beta	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	ND	ND	ND	ND	ND	ND
Endrin	ND	ND	ND	ND	ND	ND
Endrin Aldehyde	ND	ND	ND	ND	ND	ND
Heptachlor	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	ND	ND	ND	ND	ND	ND
PCB-1242	ND	ND	ND	ND	ND	ND
PCB-1254	ND	ND	ND	ND	ND	ND
PCB-1221	ND	ND	ND	ND	ND	ND
PCB-1232	ND	ND	ND	ND	ND	ND
PCB-1248	ND	ND	ND	ND	ND	ND
PCB-1260	ND	ND	ND	ND	ND	ND
PCB-1016	ND	ND	ND	ND	ND	ND
Toxaphene	ND	ND	ND	ND	ND	ND

Detection limit for all parameters is 1

Jon Gabry,PhD
Asst.Organic Lab Manag

na

princeton testing laboratory

DATE: 6-17-85

TO: Fred C. Hart Associates
530 Fifth Ave
New York NY 10036

JOB NO. 38041

AUTHORIZATION: verbal

SAMPLE: water - 18

REPORT OF ANALYSIS

PRIORITY POLLUTANTS

	#26	#27	#28	#29	#30	#31
			mg/l			
Beryllium	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Cadmium	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	36.0	44.5	31.0	55.0	45.5	15.0
Copper	5.0	8.5	6.5	12.5	12.5	2.5
Nickel	11.0	18.5	11.5	21.0	11.5	6.5
Lead	6.5	4.6	4.5	6.6	25.4	< 1.0
Zinc	22.5	29.5	24.0	49.5	34.5	14.5
Arsenic	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	2.0
Silver	< .5	< .5	< .5	< .5	< .5	< .5
Antimony	140	269	218	324	199	46.6
Selenium	< .25	< .25	< .25	< .25	< .25	< .25
Thallium	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Mercury	< .05	< .05	< .05	< .05	< .05	< .05
Cyanide	< 0.5	< 0.5	0.8	< 0.5	< 0.5	< 0.5
Phenols	< 5.5	< 5.5	8.0	< 5.5	< 5.5	< 5.5

Edna A. Alinea, Manager
Water, waste water & microbiclo

EAA:na

Princeton Service Center
U.S. Route 1
(609) 452-9060
Tlx 84-3942

princeton testing laboratory

Job #38041
6-17-85

	Detection Limit	#32	#33	#34	#35	#36	#37
				ug/gm			
Chloromethane	.02	ND	ND	ND	ND	ND	ND
Bromomethane	.10	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	.05	ND	ND	ND	ND	ND	ND
Vinyl Chloride	.02	0.82	2.41	0.12	0.56	0.35	0.58
Chloroethane	.02	ND	ND	ND	ND	ND	ND
Methylene chloride	.05	0.59	0.11	0.06	0.50	0.46	0.32
Trichlorofluoromethane	.05	0.21	<.05	ND	0.23	0.18	0.16
1,1-dichloroethene	.01	ND	ND	ND	ND	ND	ND
1,1-dichloroethane	.01	ND	ND	ND	ND	ND	ND
trans-1,2-dichloroethene	.01	ND	ND	ND	ND	ND	ND
Chloroform	.02	ND	ND	ND	ND	ND	ND
1,2-dichloroethane	.01	ND	ND	ND	ND	ND	ND
1,1,1-trichloroethane	.02	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	.02	ND	ND	ND	ND	ND	ND
Bromodichloromethane	.02	ND	ND	ND	ND	ND	ND
1,2-dichloropropane	.01	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	.05	ND	ND	ND	ND	ND	ND
Trichloroethene	.02	ND	ND	ND	<.02	<.02	ND
Dibromochloromethane	.02	ND	ND	ND	ND	ND	ND
1,1,2-trichloroethane	.05	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	.05	ND	ND	ND	ND	ND	ND
2-chloroethylvinylether	.05	ND	ND	ND	ND	ND	ND
Bromoform	.10	ND	ND	ND	ND	ND	ND
1,1,2,2-tetrachloroethane	.10	ND	ND	ND	ND	ND	ND
Tetrachloroethene	.02	.05	<.02	ND	0.07	0.09	0.03
Benzene	.01	0.17	0.28	0.09	0.18	0.18	0.20
Toluene	.01	0.13	0.22	0.04	0.11	0.16	0.13
Chlorobenzene	.01	ND	ND	ND	ND	ND	ND
Ethylbenzene	.01	ND	ND	ND	ND	ND	ND
1,3-dichlorobenzene	.01	ND	ND	ND	ND	ND	ND
1,2-dichlorobenzene	.01	ND	ND	ND	ND	ND	ND
1,4-dichlorobenzene	.01	ND	ND	ND	ND	ND	ND
Xylenes	.01	ND	ND	ND	0.05	0.06	ND

ND=not detected

Jon Gabry, PhD
Asst. Organic Lab Manage

na

environmental testing laboratory

DATE: 6-17-85

TO: Fred C. Hart & Associates
530 Fifth Ave
New York NY 10036

JOB NO. 38041

AUTHORIZATION: verbal

SAMPLE: water - 18

REPORT OF ANALYSIS

ACID EXTRACTS

	Detection Limit	#32	#33	#34	#35	#36	#37
		micrograms/gram					
2-Chlorophenol	1	ND	ND	ND	ND	ND	ND
2,4-Dichlorophenol	1	ND	ND	ND	ND	ND	ND
2,4-Dimethylphenol	1	ND	ND	ND	ND	ND	ND
4,6-Dinitro-o-cresol	10	ND	ND	ND	ND	ND	ND
2,4-Dinitrophenol	10	ND	ND	ND	ND	ND	ND
2-Nitrophenol	1	ND	ND	ND	ND	ND	ND
4-Nitrophenol	1	ND	ND	ND	ND	ND	ND
p-chloro-m-cresol	1	ND	ND	ND	ND	ND	ND
Pentachlorophenol	1	ND	ND	ND	ND	ND	ND
Phenol	1	ND	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	1	ND	ND	ND	ND	ND	ND

Jon Gabry, PhD
Asst. Organic Lab Manager

na

princeton testing laboratory

DATE: 6-17-85

TO: Fred C. Hart Associates
530 Fifth Ave
New York NY 10036

JOB NO. 38041

AUTHORIZATION: verbal

SAMPLE: water - 18

REPORT OF ANALYSIS

BASE/NEUTRAL EXTRACTS

	Detection Limit	#32	#33	#34	#35	#36	#37
		micrograms/gram					
Acenaphthene	1	ND	ND	ND	ND	ND	ND
Acenaphthylene	1	ND	ND	ND	ND	ND	ND
Anthracene	1	ND	ND	ND	ND	ND	ND
Benzidine	10	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	1	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	1	ND	ND	ND	ND	ND	ND
3,4-Benzofluoranthene	1	ND	ND	ND	ND	ND	ND
Benzo(ghi)perylene	3	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	1	ND	ND	ND	ND	ND	ND
bis(2-chloroethoxy)methane	1	ND	ND	ND	ND	NL	ND
bis(2-chloroethyl)ether	1	ND	ND	ND	ND	ND	ND
bis(2-chloroisopropyl)ether	1	ND	ND	ND	ND	ND	ND
bis(2-ethylhexyl)phthalate	1	ND	ND	ND	ND	ND	ND
4-bromophenyl phenyl ether	1	ND	ND	ND	ND	ND	ND
Butylbenzyl phthalate	1	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	1	ND	ND	ND	ND	ND	ND
4-Chlorophenyl phenyl ether	1	ND	ND	ND	ND	ND	ND
Chrysene	1	ND	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	3	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	1	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	1	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	1	ND	ND	ND	ND	ND	ND
3,3'-Dichlorobenzidine	1	ND	ND	ND	ND	ND	ND
Diethyl phthalate	1	ND	ND	ND	ND	ND	ND
Dimethyl phthalate	1	ND	ND	ND	ND	ND	ND
Di-n-butyl phthalate	1	ND	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	1	ND	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	1	ND	ND	ND	ND	ND	ND
Di-n-octyl phthalate	1	ND	ND	ND	ND	ND	ND
1,2-diphenylhydrazine (as azobenzene)	1	ND	ND	ND	ND	ND	ND
Fluoranthene	1	ND	ND	ND	ND	ND	ND

Jon Gabry, PhD
Asst. Organic Lab Manage

na

Testing
Laboratory

DATE: 6-17-85

TO:
Fred C. Hart Associates
530 Fifth Ave
New York NY 10036

JOB NO. 38041

AUTHORIZATION: verbal

SAMPLE: water - 18

REPORT OF ANALYSIS

BASE/NEUTRAL EXTRACTS (con't)

	Detection Limit	micrograms/gram #32	#33	#34	#35	#36	#37
Fluorene	1	ND	ND	ND	ND	ND	ND
Hexachlorobenzene	1	ND	ND	ND	ND	ND	ND
Hexchlorobutadiene	1	ND	ND	ND	ND	ND	ND
Hexachlorocyclopentadiene	1	ND	ND	ND	ND	ND	ND
Hexachloroethane	1	ND	ND	ND	ND	ND	ND
Ideno(1,2,3-cd)pyrene	3	ND	ND	ND	ND	ND	ND
Isophorone	1	ND	ND	ND	ND	ND	ND
Naphthalene	1	ND	ND	ND	ND	ND	ND
Nitrobenzene	1	ND	ND	ND	ND	ND	ND
N-nitrosodimethylamine	1	ND	ND	ND	ND	ND	ND
N-nitrosodi-n-propylamine	1	ND	ND	ND	ND	ND	ND
N-nitrosodiphenylamine	1	ND	ND	ND	ND	ND	ND
Phenanthrene	1	ND	ND	ND	ND	ND	ND
Pyrene	1	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	1	ND	ND	ND	ND	ND	ND

Jon Gabry, PhD,
Asst. Organic Lab Manager

na

princeton testing laboratory

DATE: 6-17-85

TO: Fred C. Hart Associates
530 Fifth Ave
New York NY 10036

JOB NO. 38041

AUTHORIZATION: verbal

SAMPLE: water - 18

REPORT OF ANALYSIS

PESTICIDES AND PCB'S

	#31	#32	#33	#34	#35	#36
			ug/g			
Aldrin	ND	ND	ND	ND	ND	ND
BHC,Alpha	ND	ND	ND	ND	ND	ND
BHC,Beta	ND	ND	ND	ND	ND	ND
BHC,Gamma	ND	ND	ND	ND	ND	ND
BHC,Delta	ND	ND	ND	ND	ND	ND
Chlordane	ND	ND	ND	ND	ND	ND
4,4'DDT	ND	ND	ND	ND	ND	ND
4,4'DDE	ND	ND	ND	ND	ND	ND
4,4'DDD	ND	ND	ND	ND	ND	ND
Dieldrin	ND	ND	ND	ND	ND	ND
Endosulfan-alpha	ND	ND	ND	ND	ND	ND
Endosulfan-beta	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	ND	ND	ND	ND	ND	ND
Endrin	ND	ND	ND	ND	ND	ND
Endrin Aldehyde	ND	ND	ND	ND	ND	ND
Heptachlor	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	ND	ND	ND	ND	ND	ND
PCB-1242	ND	ND	ND	ND	ND	ND
PCB-1254	ND	ND	ND	ND	ND	ND
PCB-1221	ND	ND	ND	ND	ND	ND
PCB-1232	ND	ND	ND	ND	ND	ND
PCB-1248	ND	ND	ND	ND	ND	ND
PCB-1260	ND	ND	ND	ND	ND	ND
PCB-1016	ND	ND	ND	ND	ND	ND
Toxapnene	ND	ND	ND	ND	ND	ND

Detection limit for all parameters is 1

Jon Gabry,PhD
Asst.Organic Lab Manage

na

princeton testing laboratory

DATE: 6-17-85

TO: Fred C. Hart & Associates
530 Fifth Ave
New York NY 10036

JOB NO. 38041

AUTHORIZATION: verbal

SAMPLE: water - 18

REPORT OF ANALYSIS

PRIORITY POLLUTANTS

	#32	#33	#34	#35	#36	#37
			mg/l			
Beryllium	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Cadmium	< .5	< .5	< .5	< .5	< .5	< .5
Chromium	17.5	46.5	45.0	36.5	38.5	43
Copper	2.5	13.5	11.5	7.0	8.0	10.5
Nickel	5.0	16.5	22.0	13.0	15.5	17.8
Lead	1.55	12.3	6.73	1.5	3.65	44
Zinc	9.0	33.5	47.5	25.0	32.0	36
Arsenic	1.8	< 1.5	1.6	< 1.5	< 1.5	4.5
Silver	< .50	< .5	.80	< .5	< .5	< .5
Antimony	57.6	230	269	185	180	208
Selenium	< .25	< .25	< .25	< .25	< .25	< .25
Thallium	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Mercury	< .05	< .05	< .05	< .05	< .05	< .05
Cyanide	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Phenols	< 5.5	5.5	< 5.5	7.5	5.5	8.0

Edna A. Alinea, Manager
Water, waste water & microbiolo

EAA:na

Princeton Service Center
U S. Route 1
(609) 452-9060
Tlx-84-3942

princeton testing laboratory

Job # 37738
5-16-85

	MDL	#6	#7	#8	#9	#10
			ug/kg			
Chloromethane	20	ND	ND	ND	ND	ND
Bromomethane	100	ND	ND	ND	ND	ND
Dichlorodifluoromethane	50	ND	ND	ND	ND	ND
Vinyl Chloride	20	1000	1400	200	1200	620
Chloroethane	20	ND	ND	ND	ND	ND
Methylene chloride	50	720	ND	ND	ND	560
Trichlorofluoromethane	50	1200	6200	270	730	1600
1,1-dichloroethene	10	ND	ND	ND	ND	ND
1,1-dichloroethane	10	ND	ND	ND	ND	ND
trans-1,2-dichloroethene	10	ND	3200	ND	ND	ND
Chloroform	20	ND	ND	ND	ND	ND
1,2-dichloroethane	10	ND	ND	ND	ND	ND
1,1,1-trichloroethane	20	ND	ND	ND	ND	ND
Carbon tetrachloride	20	ND	ND	ND	ND	ND
Bromodichloromethane	20	ND	ND	ND	ND	ND
1,2-dichloropropane	10	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	50	ND	ND	ND	ND	ND
Trichloroethene	20	ND	ND	20	ND	23
Dibromochloromethane	20	ND	ND	ND	ND	ND
1,1,2-trichloroethane	50	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	50	ND	ND	ND	ND	ND
2-chloroethylvinylether	50	ND	ND	ND	ND	ND
Bromoform	100	ND	ND	ND	ND	ND
1,1,2,2-tetrachloroethane	100	ND	ND	ND	ND	ND
Tetrachloroethene	20	ND	ND	20	ND	ND
Benzene	10	250	750	230	230	480
Toluene	10	590	400	760	480	1700
Chlorobenzene	10	ND	ND	ND	ND	ND
Ethylbenzene	10	58	ND	ND	21	220
1,3-dichlorobenzene	10	ND	ND	ND	ND	ND
1,2-dichlorobenzene	10	ND	ND	ND	ND	ND
1,4-dichlorobenzene	10	230	240	71	260	1400
Unknowns (number of)		(5)	(10)	(8)	(7)	(10)

ND=not detected

Gene Dennison PhD,CIH
Technical Director

GD:mm

Princeton Service Center
U.S. Route 1
(609) 452-9060
Tlx-84-3942

princeton testing laboratory

Job #37738
5-16-85

	11	12
	ug/kg	
Chloromethane	ND	ND
Bromomethane	ND	ND
Dichlorodifluoromethane	ND	ND
Vinyl Chloride	600	240
Chloroethane	ND	ND
Methylene chloride	ND	< 50
Trichlorofluoromethane	710	250
1,1-dichloroethene	ND	ND
1,1-dichloroethane	ND	ND
trans-1,2-dichloroethene	ND	ND
Chloroform	ND	ND
1,2-dichloroethane	ND	ND
1,1,1-trichloroethane	ND	ND
Carbon tetrachloride	ND	ND
Bromodichloromethane	ND	ND
1,2-dichloropropane	ND	ND
trans-1,3-dichloropropene	ND	ND
Trichloroethene	ND	ND
Dibromochloromethane	ND	ND
1,1,2-trichloroethane	ND	ND
cis-1,3-dichloropropene	ND	ND
2-chloroethylvinylether	ND	ND
Bromoform	ND	ND
1,1,2,2-tetrachloroethane	ND	ND
Tetrachloroethene	ND	970
Benzene	160	220
Toluene	420	550
Chlorobenzene	ND	ND
Ethylbenzene	100	140
1,3-dichlorobenzene	ND	ND
1,2-dichlorobenzene	270	420
1,4-dichlorobenzene		
unknowns (number of)	(6)	(7)

ND=not detected

Gene Dennison, PhD, CIH
Technical Director

SV:na

princeton testing laboratory

DATE May 16, 1985

TO: Fred C. Hart Associates
530 Fifth Ave
New York NY 10036

ATT: Jim Meck

JOB NO 37738

AUTHORIZATION verbal

SAMPLE soil - 12

REPORT OF ANALYSIS

ACID EXTRACTS

	Detection Limit	1	2	3	4	5	6
		micrograms/gram					
2-Chlorophenol	1	ND	ND	ND	ND	ND	ND
2,4-Dichlorophenol	1	ND	ND	ND	ND	ND	ND
2,4-Dimethylphenol	1	ND	ND	ND	ND	ND	ND
4,6-Dinitro-o-cresol	10	ND	ND	ND	ND	ND	ND
2,4-Dinitrophenol	10	ND	ND	ND	ND	ND	ND
2-Nitrophenol	1	ND	ND	ND	ND	ND	ND
4-Nitrophenol	1	ND	ND	ND	ND	ND	ND
p-chloro-m-cresol	1	ND	ND	ND	ND	ND	ND
Pentachlorophenol	1	ND	ND	ND	ND	ND	ND
Phenol	1	ND	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	1	ND	ND	ND	ND	ND	ND

Gene Dennison,PhD,CIH
Technical Director

MK:na

princeton testing laboratory

DATE: May 16, 1985

TO:
Fred C. Hart Associates
530 Fifth Ave
New York NY 10036

ATT: Jim Meck

JOB NO. 37738

AUTHORIZATION: verbal

SAMPLE: soil - 12

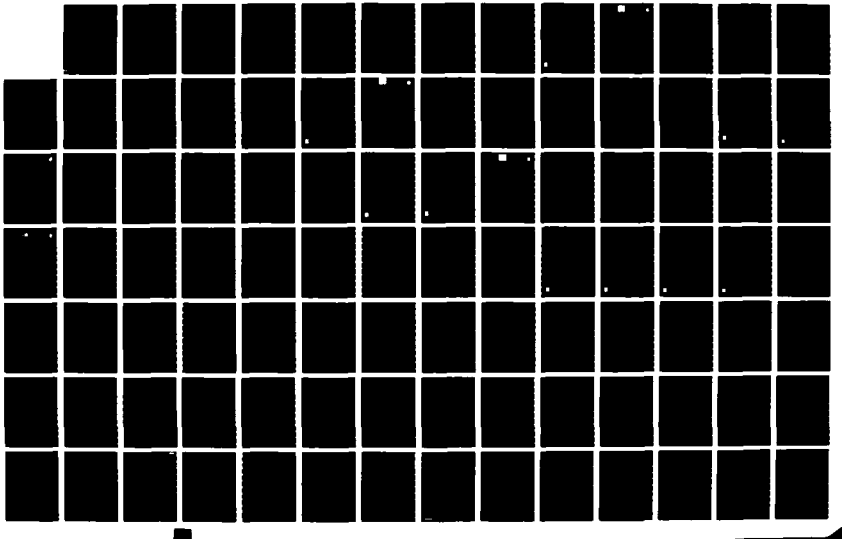
REPORT OF ANALYSIS

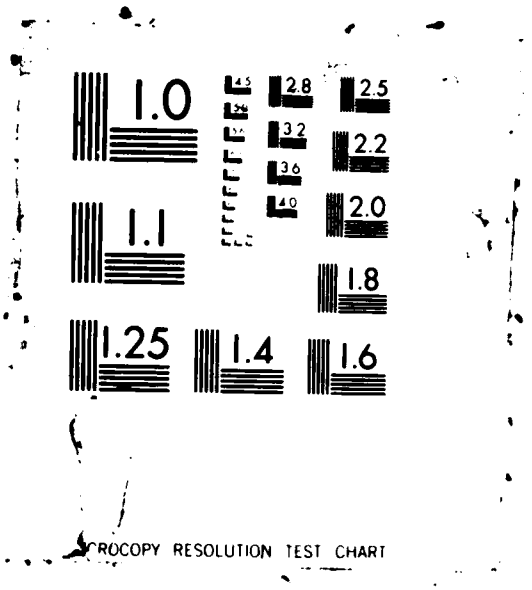
ACID EXTRACTS

	7	8	9	10	11	12
	micrograms/gram					
2-Chlorophenol	ND	ND	ND	ND	ND	ND
2,4-Dichlorophenol	ND	ND	ND	ND	ND	ND
2,4-Dimethylphenol	ND	ND	ND	ND	ND	ND
4,6-Dinitro-o-cresol	ND	ND	ND	ND	ND	ND
2,4-Dinitrophenol	ND	ND	ND	ND	ND	ND
2-Nitrophenol	ND	ND	ND	ND	ND	ND
4-Nitrophenol	ND	ND	ND	ND	ND	ND
p-chloro-m-cresol	ND	ND	ND	ND	ND	ND
Pentachlorophenol	ND	ND	ND	ND	ND	ND
Phenol	ND	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	ND	ND	ND	ND	ND	ND

MK:na

AD-A178 420 INSTALLATION RESTORATION PROGRAM PHASE II 2/3
CONFIRMATION/QUANTIFICATION STA..(U) HART (FRED C)
ASSOCIATES INC NEW YORK SEP 86 F33615-84-D-4404
UNCLASSIFIED F/G 13/2 NL

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ROCOPY RESOLUTION TEST CHART

princeton testing laboratory

DATE: 5-15-85

JOB NO. 37738

TO: Fred C. Hart Associates
530 Fifth Ave
New York NY 10036

ATT: Jim Meck

AUTHORIZATION:

SAMPLE:

REPORT OF ANALYSIS

BASE/NEUTRAL EXTRACTS

	Detection Limit	1	2	3	4	5	6
		micrograms/gram					
Acenaphthene	1	ND	ND	ND	ND	ND	ND
Acenaphthylene	1	ND	ND	ND	ND	ND	ND
Anthracene	1	ND	ND	ND	ND	ND	ND
Benzidine	10	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	1	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	1	ND	ND	ND	ND	ND	ND
3,4-Benzofluoranthene	1	ND	ND	ND	ND	ND	ND
Benzo(ghi)perylene	3	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	1	ND	ND	ND	ND	ND	ND
bis(2-chloroethoxy)methane	1	ND	ND	ND	ND	ND	ND
bis(2-chloroethyl)ether	1	ND	ND	ND	ND	ND	ND
bis(2-chloroisopropyl)ether	1	ND	ND	ND	ND	ND	ND
bis(2-ethylhexyl)phthalate	1	ND	ND	ND	ND	ND	ND
4-bromophenyl phenyl ether	1	ND	ND	ND	ND	ND	ND
Butylbenzyl phthalate	1	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	1	ND	ND	ND	ND	ND	ND
4-Chlorophenyl phenyl ether	1	ND	ND	ND	ND	ND	ND
Chrysene	1	ND	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	3	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	1	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	1	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	1	ND	ND	ND	ND	ND	ND
3,3'-Dichlorobenzidine	1	ND	ND	ND	ND	ND	ND
Diethyl phthalate	1	ND	ND	ND	ND	ND	ND
Dimethyl phthalate	1	ND	ND	ND	ND	ND	ND
Di-n-butyl phthalate	1	ND	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	1	ND	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	1	ND	ND	ND	ND	ND	ND
Di-n-octyl phthalate	1	ND	ND	ND	ND	ND	ND
1,2-diphenylhydrazine (as azobenzene)	1	ND	ND	ND	ND	ND	ND
Fluoranthene	1	ND	ND	ND	ND	ND	ND

Gene Dennison,PhD,CIH
Technical Director

MK:na

princeton testing laboratory

DATE: 5-16-85

TO: Fred C. Hart Associates
530 Fifth Ave
New York NY 10036

ATT: Jim Meck

JOB NO. 37738

AUTHORIZATION: verbal

SAMPLE:

REPORT OF ANALYSIS

BASE/NEUTRAL EXTRACTS (con't)

	Detection Limit	micrograms/gram 1	2	3	4	5	6
Fluorene	1	ND	ND	ND	ND	ND	ND
Hexachlorobenzene	1	ND	ND	ND	ND	ND	ND
Hexchlorobutadiene	1	ND	ND	ND	ND	ND	ND
Hexachlorocyclopentadiene	1	ND	ND	ND	ND	ND	ND
Hexachloroethane	1	ND	ND	ND	ND	ND	ND
Ideno(1,2,3-cd)pyrene	3	ND	ND	ND	ND	ND	ND
Isophorone	1	ND	ND	ND	ND	ND	ND
Naphthalene	1	ND	ND	ND	ND	ND	ND
Nitrobenzene	1	ND	ND	ND	ND	ND	ND
N-nitrosodimethylamine	1	ND	ND	ND	ND	ND	ND
N-nitrosodi-n-propylamine	1	ND	ND	ND	ND	ND	ND
N-nitrosodiphenylamine	1	ND	ND	ND	ND	ND	ND
Phenanthrene	1	ND	ND	ND	ND	ND	ND
Pyrene	1	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	1	ND	ND	ND	ND	ND	ND

Gene Dennison,PhD,CIH
Technical Director

MK:na

princeton testing laboratory

DATE: 5-16-85

JOB NO. 37738

AUTHORIZATION: verbal

SAMPLE: soil - 12

TO: Fred C. Hart Associates
530 Fifth Ave
New York NY 10036

ATT: Jim Meck

REPORT OF ANALYSIS

BASE/NEUTRAL EXTRACTS

micrograms/gram

	7	8	9	10	11	12
Acenaphthene	ND	ND	ND	ND	ND	ND
Acenaphthylene	ND	ND	ND	ND	ND	ND
Anthracene	ND	ND	ND	ND	ND	ND
Benzidine	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	ND	ND	ND	ND	ND	ND
3,4-Benzofluoranthene	ND	ND	ND	ND	ND	ND
Benzo(ghi)perylene	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	ND	ND	ND	ND	ND	ND
bis(2-chloroethoxy)methane	ND	ND	ND	ND	ND	ND
bis(2-chloroethyl)ether	ND	ND	ND	ND	ND	ND
bis(2-chloroisopropyl)ether	ND	ND	ND	ND	ND	ND
bis(2-ethylhexyl)phthalate	ND	ND	ND	ND	ND	ND
4-bromophenyl phenyl ether	ND	ND	ND	ND	ND	ND
Butylbenzyl phthalate	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND
4-Chlorophenyl phenyl ether	ND	ND	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND
3,3'-Dichlorobenzidine	ND	ND	ND	ND	ND	ND
Diethyl phthalate	ND	ND	ND	ND	ND	ND
Dimethyl phthalate	ND	ND	ND	ND	ND	ND
Di-n-butyl phthalate	ND	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	ND	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	ND	ND	ND	ND	ND	ND
Di-n-octyl phthalate	ND	ND	ND	ND	ND	ND
1,2-diphenylhydrazine (as azobenzene)	ND	ND	ND	ND	ND	ND
Fluoranthene	ND	ND	ND	ND	ND	ND

Gene Dennison,PhD,CIH
Technical Director

MK:na

princeton testing laboratory

DATE: 5-16-85

TO: Fred C. Hart Associates
530 Fifth Ave
New York NY 10036

JOB NO. 37738

AUTHORIZATION: verbal

ATT: Jim Meck

SAMPLE: soil - 12

REPORT OF ANALYSIS

BASE/NEUTRAL EXTRACTS (con't)

micrograms/gram

	7	8	9	10	11	12
Fluorene	ND	ND	ND	ND	ND	ND
Hexachlorobenzene	ND	ND	ND	ND	ND	ND
Hexchlorobutadiene	ND	ND	ND	ND	ND	ND
Hexachlorocyclopentadiene	ND	ND	ND	ND	ND	ND
Hexachloroethane	ND	ND	ND	ND	ND	ND
Ideno(1,2,3-cd)pyrene	ND	ND	ND	ND	ND	ND
Isophorone	ND	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND	ND
Nitrobenzene	ND	ND	ND	ND	ND	ND
N-nitrosodimethylamine	ND	ND	ND	ND	ND	ND
N-nitrosodi-n-propylamine	ND	ND	ND	ND	ND	ND
N-nitrosodiphenylamine	ND	ND	ND	ND	ND	ND
Phenanthrene	ND	ND	ND	ND	ND	ND
Pyrene	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND

Gene Dennison, PhD, CIH
Technical Director

MK:na

princeton testing laboratory

DATE: 5-15-85

TO: Fred C. Hart Associates
530 Fifth Ave
New York, NY 10036

ATT: Jim Meck

JOB NO. 37738

AUTHORIZATION:

SAMPLE:

REPORT OF ANALYSIS

PESTICIDES AND PCB'S

	Detection Limit	1	2	3	4	5	6
		micrograms/gram					
Aldrin	0.01	ND	ND	ND	ND	ND	ND
BHC,Alpha	0.01	ND	ND	ND	ND	ND	ND
BHC,Beta	0.01	ND	ND	ND	ND	ND	ND
BHC,Gamma	0.01	ND	ND	ND	ND	ND	ND
BHC,Delta	0.01	ND	ND	ND	ND	ND	ND
Chlordane	0.01	ND	ND	ND	ND	ND	ND
4,4'DDT	0.01	ND	ND	ND	ND	ND	ND
4,4'DDE	0.01	ND	ND	ND	ND	ND	ND
4,4'DDD	0.01	ND	ND	ND	ND	ND	ND
Dieldrin	0.01	ND	ND	ND	ND	ND	ND
Endosulfan-alpha	0.01	ND	ND	ND	ND	ND	ND
Endosulfan-beta	0.01	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	0.01	ND	ND	ND	ND	ND	ND
Endrin	0.01	ND	ND	ND	ND	ND	ND
Endrin Aldehyde	0.01	ND	ND	ND	ND	ND	ND
Heptachlor	0.01	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	0.01	ND	ND	ND	ND	0.017	0.021
PCB-1242	1	ND	ND	ND	ND	ND	ND
PCB-1254	1	ND	ND	ND	ND	ND	ND
PCB-1221	1	ND	ND	ND	ND	ND	ND
PCB-1232	1	ND	ND	ND	ND	ND	ND
PCB-1248	1	ND	ND	ND	ND	ND	ND
PCB-1260	1	ND	ND	ND	ND	ND	ND
PCB-1016	1	ND	ND	ND	ND	ND	ND
Toxaphene	1	ND	ND	ND	ND	ND	ND

Gene Dennison, Ph.D., CIH
Technical Director

MK:na

princeton testing laboratory

DATE: 5-15-85

TO: Fred C. Hart Associates
530 Fifth Ave
New York NY 10036
ATT: Jim Meck

JOB NO. 37738

AUTHORIZATION:

SAMPLE:

REPORT OF ANALYSIS

PESTICIDES AND PCB'S

	7	8	9	10	11	12
	micrograms/gram					
Aldrin	ND	ND	ND	ND	ND	ND
BHC,Alpha	ND	ND	ND	ND	ND	ND
BHC,Beta	ND	ND	ND	ND	ND	ND
BHC,Gamma	ND	ND	ND	ND	ND	ND
BHC,Delta	ND	ND	ND	ND	ND	ND
Chlordane	ND	ND	ND	ND	ND	ND
4,4'DDT	ND	ND	ND	ND	ND	ND
4,4'DDE	ND	ND	ND	ND	ND	ND
4,4'DDD	ND	ND	ND	ND	ND	ND
Dieldrin	ND	ND	ND	ND	ND	ND
Endosulfan-alpha	ND	ND	ND	ND	ND	ND
Endosulfan-beta	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	ND	ND	ND	ND	ND	ND
Endrin	ND	ND	ND	ND	ND	ND
Endrin Aldehyde	ND	ND	ND	ND	ND	ND
Heptachlor	ND	ND	ND	ND	ND	0.011
Heptachlor epoxide	ND	ND	ND	ND	ND	ND
PCB-1242	ND	ND	ND	ND	ND	ND
PCB-1254	ND	ND	ND	ND	ND	ND
PCB-1221	ND	ND	ND	ND	ND	ND
PCB-1232	ND	ND	ND	ND	ND	ND
PCB-1248	ND	ND	ND	ND	ND	ND
PCB-1260	ND	ND	ND	ND	ND	ND
PCB-1016	ND	ND	ND	ND	ND	ND
Toxaphene	ND	ND	ND	ND	ND	ND

Gene Dennison, Ph.D.
Technical Director

K:na

princeton testing laboratory

DATE: June 14, 1985

TO: Fred C. Hart Associates
530 Fifth Ave
New York, NY 10036

Att: Jim Meck

JOB NO. 37738

AUTHORIZATION:

SAMPLE: Soil - 12

REPORT OF ANALYSIS

RECEIVED JUN 20 1985

PRIORITY POLLUTANTS

mg/kg

	#1	#2	#3	#4	#5	#6
Beryllium	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5
Cadmium	< .5	.75	< .5	.50	1.1	.50
Chromium	24.1	32.2	28.9	30.7	45.9	34.9
Copper	4.1	9.2	5.0	4.8	37.5	16.5
Nickel	23.7	215	36.7	28.7	236	65.3
Lead	13.9	14.4	11.6	14.6	238	63.0
Zinc	23.7	215	36.7	28.7	236	65.3
Arsenic	< 1.5	<1.5	< 1.5	< 1.5	<1.5	< 1.5
Silver	.50	.90	.50	.90	1.2	.90
Antimony	108	189	140	160	150	155
Selenium	< .25	< .25	< .25	< .25	<.25	<.25
Thallium	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5
Mercury	<.05	< .05	< .05	< .05	.06	.06
Cyanide	< 0.5	< 0.5	< 0.5	2.3	< 0.5	< 0.5
Phenols	< 5.5	6.5	7.0	< 5.5	7.0	< 5.5

Edna A. Alinea, Manager
Water, Waste Water & Microbiology

EAA/rk

Princeton Testing Laboratory
U.S. Route 1
Princeton Service Center
(609) 452 9050
P.O. Box 310X, Princeton, N.J. 08540

QUALITY CONTROL REPORT

Duplicate Analysis

JOB NO. 38041
ANALYST: JG
DATE: 6-17-85
MATRIX: soil
METHOD: EPA8010,8020

COMPOUND		CONCENTRATION (ug/l)		Relative Percent Difference (RPD)*
Sample ID	COMPOUND NAME	Run 1 (D_1)	Run 2 (D_2)	
#26	Vinyl chloride	2.34	0.88	90.7
	Methylene chloride	0.38	0.33	14.1
	Trichlorofluoromethane	0.11	0.23	70.6
	Tetrachloroethylene	0.09	0.04	76.9
	Benzene	0.26	0.16	36.4
	Toluene	0.08	0.06	28.5
#36	Vinyl chloride	0.35	0.36	2.8
	Methylene chloride	0.46	0.42	9.1
	Trichlorofluoromethane	0.18	0.15	18.2
	Tetrachloroethylene	0.09	0.09	0
	Benzene	0.18	0.18	0
	Toluene	0.16	0.16	0
	Trichloroethylene	0.019	0.02	5.1
	Xylenes (m&p)	0.06	0.07	15.4

$$*RPD = \left[\frac{(D_1 - D_2)}{(D_1 + D_2)/2}\right] \times 100$$

Princeton Service Center
U.S. Route 1
(609) 452-9060
Tlx-84-3942

princeton testing laboratory

P. O. Box [illegible] Princeton, N.J. 08540

Job # 38140
6-21-85

	Detection Limit	38	39	40	46	47	48
Chloromethane	.02	ND	ND	ND	ND	ND	ND
Bromomethane	.10	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	.05	ND	ND	ND	ND	ND	ND
Vinyl Chloride	.02	ND	0.03	0.64	0.10	0.03	0.25
Chloroethane	.02	ND	ND	ND	ND	ND	ND
Methylene chloride	.05	0.12	0.12	0.14	0.12	0.09	0.16
Trichlorofluoromethane	.05	ND	0.05	<.05	ND	ND	0.18
1,1-dichloroethene	.01	ND	ND	ND	ND	ND	ND
1,1-dichloroethane	.01	ND	ND	ND	ND	ND	ND
trans-1,2-dichloroethene	.01	ND	ND	ND	ND	ND	ND
Chloroform	.02	ND	ND	ND	ND	ND	ND
1,2-dichloroethane	.01	ND	ND	ND	ND	ND	ND
1,1,1-trichloroethane	.02	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	.02	ND	ND	ND	ND	ND	ND
Bromodichloromethane	.02	ND	ND	ND	ND	ND	ND
1,2-dichloropropane	.01	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	.05	ND	ND	ND	ND	ND	ND
Trichloroethene	.02	<.02	ND	<.02	ND	0.08	<.02
Dibromochloromethane	.02	ND	ND	ND	ND	ND	ND
1,1,2-trichloroethane	.05	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	.05	ND	ND	ND	ND	ND	ND
2-chloroethylvinylether	.05	ND	ND	ND	ND	ND	ND
Bromoform	.10	ND	ND	ND	ND	ND	ND
1,1,2,2-tetrachloroethane	.10	ND	ND	ND	ND	ND	ND
Tetrachloroethene	.02	ND	0.04	0.07	ND	0.08	0.03
Benzene	.01	0.13	0.11	0.12	0.12	0.09	0.16
Toluene	.01	ND	0.02	0.02	<.01	0.03	0.05
Chlorobenzene	.01	ND	ND	ND	ND	ND	ND
Ethylbenzene	.01	ND	ND	ND	ND	ND	ND
1,3-dichlorobenzene	.01	ND	ND	ND	ND	ND	ND
1,2-dichlorobenzene	.01	ND	ND	ND	ND	ND	ND
1,4-dichlorobenzene	.01	ND	ND	ND	ND	ND	ND

ND=not detected

Jon Gabry, PhD
Asst. Organic Lab. Mgr.

JG:mm

princeton testing laboratory

DATE: 6-24-85

TO: Fred C. Hart Assoc.
530 Fifth Ave
New York, NY 10036
ATT: Jim Meck

JOB NO. 38140

AUTHORIZATION:

SAMPLE:

REPORT OF ANALYSIS

ACID EXTRACTS

micrograms/gram	Detection limit	38	39	40
2-Chlorophenol	1	ND	ND	ND
2,4-Dichlorophenol	1	ND	ND	ND
2,4-Dimethylphenol	1	ND	ND	ND
4,6-Dinitro-o-cresol	10	ND	ND	ND
2,4-Dinitrophenol	10	ND	ND	ND
2-Nitrophenol	1	ND	ND	ND
4-Nitrophenol	1	ND	ND	ND
p-chloro-m-cresol	1	ND	ND	ND
Pentachlorophenol	1	ND	ND	ND
Phenol	1	ND	ND	ND
2,4,6-Trichlorophenol	1	ND	ND	ND

Jon Gabry, PhD
Asst. Organic Lab Mgr.

JG:mm

princeton testing laboratory

DATE: 6-24-85

TO:
Fred C. Hart Assoc.
530 Fifth Ave
New York, NY 10036
ATT: Jim Meck

JOB NO. 38140

AUTHORIZATION:

SAMPLE:

REPORT OF ANALYSIS

ACID EXTRACTS

micrograms/gram	Detection limit	46	47	48
2-Chlorophenol	1	ND	ND	ND
2,4-Dichlorophenol	1	ND	ND	ND
2,4-Dimethylphenol	1	ND	ND	ND
4,6-Dinitro-o-cresol	10	ND	ND	ND
2,4-Dinitrophenol	10	ND	ND	ND
2-Nitrophenol	1	ND	ND	ND
4-Nitrophenol	1	ND	ND	ND
p-chloro-m-cresol	1	ND	ND	ND
Pentachlorophenol	1	ND	ND	ND
Phenol	1	ND	ND	ND
2,4,6-Trichlorophenol	1	ND	ND	ND

Jon Gabry, PhD
Asst. Organic Lab Mgr.

JG:mm

princeton testing laboratory

DATE: 6-21-85

TO: Fred C. Hart
530 Fifth Ave
New York, NY 10036
ATT: Jim Meck

JOB NO. 38140

AUTHORIZATION:

SAMPLE: water

REPORT OF ANALYSIS

BASE/NEUTRAL EXTRACTS

micrograms/gram	Detection Limit	38	39	40
Acenaphthene	1	ND	ND	ND
Acenaphthylene	1	ND	ND	ND
Anthracene	1	ND	ND	ND
Benzidine	10	ND	ND	ND
Benzo(a)anthracene	1	ND	ND	ND
Benzo(a)pyrene	1	ND	ND	ND
3,4-Benzofluoranthene	1	ND	ND	ND
Benzo(ghi)perylene	3	ND	ND	ND
Benzo(k)fluoranthene	1	ND	ND	ND
bis(2-chloroethoxy)methane	1	ND	ND	ND
bis(2-chloroethyl)ether	1	ND	ND	ND
bis(2-chloroisopropyl)ether	1	ND	ND	ND
bis(2-ethylhexyl)phthalate	1	ND	ND	ND
4-bromophenyl phenyl ether	1	ND	ND	ND
Butylbenzyl phthalate	1	ND	ND	ND
2-Chloronaphthalene	1	ND	ND	ND
4-Chlorophenyl phenyl ether	1	ND	ND	ND
Chrysene	1	ND	ND	ND
Dibenzo(a,h)anthracene	3	ND	ND	ND
1,2-Dichlorobenzene	1	ND	ND	ND
1,3-Dichlorobenzene	1	ND	ND	ND
1,4-Dichlorobenzene	1	ND	ND	ND
3,3'-Dichlorobenzidine	1	ND	ND	ND
Diethyl phthalate	1	ND	ND	ND
Dimethyl phthalate	1	ND	ND	ND
Di-n-butyl phthalate	1	ND	ND	ND
2,4-Dinitrotoluene	1	ND	ND	ND
2,6-Dinitrotoluene	1	ND	ND	ND
Di-n-octyl phthalate	1	ND	ND	ND
1,2-diphenylhydrazine (as azobenzene)	1	ND	ND	ND
Fluoranthene	1	ND	ND	ND

Jon Gabry, PhD
Asst. Organic Lab. Mgr.

JG:mm

princeton testing laboratory

DATE: 6-24-85

TO:
Fred C. Hart Assoc.
530 Fifth Ave
New York,, NY 10036
ATT: Jim Meck

JOB NO. - - 38140

AUTHORIZATION:

SAMPLE:

REPORT OF ANALYSIS

BASE/NEUTRAL EXTRACTS (con't)

micrograms/gram	Detection Limit	38	39	40
Fluorene	1	ND	ND	ND
Hexachlorobenzene	1	ND	ND	ND
Hexchlorobutadiene	1	ND	ND	ND
Hexachlorocyclopentadiene	1	ND	ND	ND
Hexachloroethane	1	ND	ND	ND
Ideno(1,2,3-cd)pyrene	3	ND	ND	ND
Isophorone	1	ND	ND	ND
Naphthalene	1	ND	ND	ND
Nitrobenzene	1	ND	ND	ND
N-nitrosodimethylamine	1	ND	ND	ND
N-nitrosodi-n-propylamine	1	ND	ND	ND
N-nitrosodiphenylamine	1	ND	ND	ND
Phenanthrene	1	ND	ND	ND
Pyrene	1	ND	ND	ND
1,2,4-Trichlorobenzene	1	ND	ND	ND

Jon Gabry, PhD
Asst.. Organic Lab Mgr.

JGF mm

princeton testing laboratory

DATE: 6-24-85

TO:

Fred C. Hart Assoc.
530 Fifth Ave
New York, NY 10036
ATT: Jim Meck

JOB NO. 38140

AUTHORIZATION:

SAMPLE:

REPORT OF ANALYSIS

BASE/NEUTRAL EXTRACTS

micrograms/gram	Detection Limit	46	47	48
Acenaphthene	1	ND	ND	ND
Acenaphthylene	1	ND	ND	ND
Anthracene	1	ND	ND	ND
Benzidine	10	ND	ND	ND
Benzo(a)anthracene	1	ND	ND	ND
Benzo(a)pyrene	1	ND	ND	ND
3,4-Benzofluoranthene	1	ND	ND	ND
Benzo(ghi)perylene	3	ND	ND	ND
Benzo(k)fluoranthene	1	ND	ND	ND
bis(2-chloroethoxy)methane	1	ND	ND	ND
bis(2-chloroethyl)ether	1	ND	ND	ND
bis(2-chloroisopropyl)ether	1	ND	ND	ND
bis(2-ethylhexyl)phthalate	1	ND	ND	ND
4-bromophenyl phenyl ether	1	ND	ND	ND
Butylbenzyl phthalate	1	ND	ND	ND
2-Chloronaphthalene	1	ND	ND	ND
4-Chlorophenyl phenyl ether	1	ND	ND	ND
Chrysene	1	ND	ND	ND
Dibenzo(a,h)anthracene	3	ND	ND	ND
1,2-Dichlorobenzene	1	ND	ND	ND
1,3-Dichlorobenzene	1	ND	ND	ND
1,4-Dichlorobenzene	1	ND	ND	ND
3,3'-Dichlorobenzidine	1	ND	ND	ND
Diethyl phthalate	1	ND	ND	ND
Dimethyl phthalate	1	ND	ND	ND
Di-n-butyl phthalate	1	ND	ND	ND
2,4-Dinitrotoluene	1	ND	ND	ND
2,6-Dinitrotoluene	1	ND	ND	ND
Di-n-octyl phthalate	1	ND	ND	ND
1,2-diphenylhydrazine (as azobenzene)	1	ND	ND	ND
Fluoranthene	1	ND	ND	ND

Jon Gabry, PhD
Asst. Organic Lab. Mgr.

JG:mm

princeton testing laboratory

DATE: 6-24-85

TO: Fred C. Hart Assoc.
530 Fifth Ave
New York, NY 10036
ATT: Jim Meck

JOB NO. 38140

AUTHORIZATION:

SAMPLE:

REPORT OF ANALYSIS

micrograms/gram	BASE/NEUTRAL EXTRACTS (con't) Detection limit	46	47	48
Fluorene	1	ND	ND	ND
Hexachlorobenzene	1	ND	ND	ND
Hexchlorobutadiene	1	ND	ND	ND
Hexachlorocyclopentadiene	1	ND	ND	ND
Hexachloroethane	1	ND	ND	ND
Ideno(1,2,3-cd)pyrene	3	ND	ND	ND
Isophorone	1	ND	ND	ND
Naphthalene	1	ND	ND	ND
Nitrobenzene	1	ND	ND	ND
N-nitrosodimethylamine	1	ND	ND	ND
N-nitrosodi-n-propylamine	1	ND	ND	ND
N-nitrosodiphenylamine	1	ND	ND	ND
Phenanthrene	1	ND	ND	ND
Pyrene	1	ND	ND	ND
1,2,4-Trichlorobenzene	1	ND	ND	ND

Jon Gabry, PhD
Asst. Organic Lab. Mgr.

JG:mm

princeton testing laboratory

DATE: 6-24-85

JOB NO. 38140

TO:

Fred C. Hart Assoc.
530 Fifth Ave
New York, NY 10036
ATT: Jim Meck

AUTHORIZATION:

SAMPLE:

REPORT OF ANALYSIS

PESTICIDES AND PCB'S

ug/g	Detection Limit	38	39	40	46	47	48
Aldrin	1	ND	ND	ND	ND	ND	ND
BHC,Alpha	1	ND	ND	ND	ND	ND	ND
BHC,Beta	1	ND	ND	ND	ND	ND	ND
BHC,Gamma	1	ND	ND	ND	ND	ND	ND
BHC,Delta	1	ND	ND	ND	ND	ND	ND
Chlordane	1	ND	ND	ND	ND	ND	ND
4,4'DDT	1	ND	ND	ND	ND	ND	ND
4,4'DDE	1	ND	ND	ND	ND	ND	ND
4,4'DDD	1	ND	ND	ND	ND	ND	ND
Dieldrin	1	ND	ND	ND	ND	ND	ND
Endosulfan-alpha	1	ND	ND	ND	ND	ND	ND
Endosulfan-beta	1	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	1	ND	ND	ND	ND	ND	ND
Endrin	1	ND	ND	ND	ND	ND	ND
Endrin Aldehyde	1	ND	ND	ND	ND	ND	ND
Heptachlor	1	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	1	ND	ND	ND	ND	ND	ND
PCB-1242	1	ND	ND	ND	ND	ND	ND
PCB-1254	1	ND	ND	ND	ND	ND	ND
PCB-1221	1	ND	ND	ND	ND	ND	ND
PCB-1232	1	ND	ND	ND	ND	ND	ND
PCB-1248	1	ND	ND	ND	ND	ND	ND
PCB-1260	1	ND	ND	ND	ND	ND	ND
PCB-1016	1	ND	ND	ND	ND	ND	ND
Toxaphene	1	ND	ND	ND	ND	ND	ND

Jon Gabry, PhD
Asst. Organic Lab Mg

JG:mm

princeton testing laboratory

DATE: 6-21-85

TO: Fred C. Hart Assoc.
530 Fifth Ave
New York, NY 10036
ATT: Jim Meck

JOB NO. 38140

AUTHORIZATION:

SAMPLE: water soil

REPORT OF ANALYSIS

PRIORITY POLLUTANTS

#AF/GE83

	38	39	40	46	47	48
		mg/kg				
Beryllium	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cadmium	<1.0	2.0	2.0	1.0	7.0	<1.0
Chromium	2.0	30	24	4.0	325	4.0
Copper	6.0	22	15	7.0	62	5.0
Nickel	10	35	25	15	171	10
Lead	13	67	61	26	250	13
Zinc	10	45	46	10	77	8.0
Arsenic	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
Silver	<1.0	<1.0	<1.0	6.0	5.0	<1.0
Antimony	5.8	22	18	6.1	60	5.6
Selenium	<.50	.50	.50	<.50	<.50	<.50
Thallium	2.0	7.0	7.0	2.0	21	2.0
Mercury	<.100	<.100	<.100	<.100	<.100	<.100
Cyanide	<0.5	0.88	0.5	0.5	<0.5	<0.5
Phenols	<6.0	<6.0	<6.0	<6.0	11.0	16.0

sample 49 was broken
sample received 4-25-85

Edna A. Alinea, Manager
Water, waste water & Microb.

EAA:mm

Princeton Testing Laboratory
U.S. Route 1
Princeton Service Center
(609) 452-9050
P.O. Box 3108, Princeton, N.J. 08540

QUALITY CONTROL REPORT

Duplicate Analysis

JOB NO. 38140
ANALYST JG
DATE 6-21-85
MATRIX soil
METHOD 8010/8020

COMPOUND		CONCENTRATION (ug/l)		Relative Percent Difference (RPD)*
Sample ID	COMPOUND NAME	Run 1 (D_1)	Run 2 (D_2)	
40	Vinly Chloride	0.64	0.62	3.2
	Methylene Chloride	0.14	0.08	54
	Trichlorofluoromethane	< .05	< .05	0
	Trichloroethylene	< .02	< .02	0
	Tetrachloroethylene	0.07	0.07	0
	Benzene	0.12	0.11	8.7
	Toluene	0.02	0.02	0

$$*RPD = \frac{(D_1 - D_2)}{\left[\frac{(D_1 + D_2)}{2}\right]} \times 100$$

Princeton Service Center
U.S. Route 1
(609) 452-9060
Tlx-84-3942

princeton testing laboratory

P.O. Box 3108, Princeton, N.J. 08540

Job 38140
6-21-85

ug/l

	Detection Limit	41	42	43	44	45
Chloromethane	2	ND	ND	ND	ND	ND
Bromomethane	10	ND	ND	ND	ND	ND
Dichlorodifluoromethane	5	ND	ND	ND	ND	ND
Vinyl Chloride	2	ND	ND	2.9	ND	2.7
Chloroethane	2	ND	ND	ND	ND	ND
Methylene chloride	5	ND	ND	<5	51	<5
Trichlorofluoromethane	5	ND	ND	<5	ND	<5
1,1-dichloroethene	1	ND	ND	<1	ND	<1
1,1-dichloroethane	1	ND	ND	5.7	ND	ND
trans-1,2-dichloroethene	1	ND	ND	ND	ND	ND
Chloroform	2	ND	ND	ND	ND	ND
1,2-dichloroethane	1	ND	ND	ND	ND	ND
1,1,1-trichloroethane	2	ND	ND	<2	<2	ND
Carbon tetrachloride	2	ND	ND	ND	ND	ND
Bromodichloromethane	2	ND	ND	ND	ND	ND
1,2-dichloropropane	1	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	5	ND	ND	ND	ND	ND
Trichloroethene	2	ND	ND	ND	ND	ND
Dibromochloromethane	2	ND	ND	ND	ND	ND
1,1,2-trichloroethane	5	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	5	ND	ND	ND	ND	ND
2-chloroethylvinylether	5	ND	ND	ND	ND	ND
Bromoform	10	ND	ND	ND	ND	ND
1,1,2,2-tetrachloroethane	10	ND	ND	ND	ND	ND
Tetrachloroethene	2	ND	ND	<2	<2	ND
Benzene	1	ND	ND	<1	<1	<1
Toluene	1	ND	ND	<1	ND	<1
Chlorobenzene	1	ND	ND	ND	ND	ND
Ethylbenzene	1	ND	ND	ND	ND	ND
1,3-dichlorobenzene	1	ND	ND	ND	ND	ND
1,2-dichlorobenzene	1	ND	ND	ND	ND	ND
1,4-dichlorobenzene	1	ND	ND	ND	ND	ND

ND=not detected

Jon Gabry, PhD
Asst. Organic Lab. Mgr.

JG:mm

princeton testing laboratory

DATE: 6-24-85

TO:
Fred C. Hart Assoc.
530 Fifth Ave
New York, NY 10036
ATT: Jim Meck

JOB NO. 38140

AUTHORIZATION:

SAMPLE:

REPORT OF ANALYSIS

ACID EXTRACTS

micrograms/liter	Detection limit	41	42	43	44	45
2-Chlorophenol	25	ND	ND	ND	ND	ND
2,4-Dichlorophenol	25	ND	ND	ND	ND	ND
2,4-Dimethylphenol	25	ND	ND	ND	ND	ND
4,6-Dinitro-o-cresol	250	ND	ND	ND	ND	ND
2,4-Dinitrophenol	250	ND	ND	ND	ND	ND
2-Nitrophenol	25	ND	ND	ND	ND	ND
4-Nitrophenol	25	ND	ND	ND	ND	ND
p-chloro-m-cresol	25	ND	ND	ND	ND	ND
Pentachlorophenol	25	ND	ND	ND	ND	ND
Phenol	25	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	25	ND	ND	ND	ND	ND

Jon Gabry, PhD
Asst. Organic Lab. Mgr

JG:mm

princeton testing laboratory

DATE: 6-24-85

TO: Fred C. Hart Assoc.
530 Fifth Ave
New York, NY 10036
ATT: Jim Meck

JOB NO. 38140

AUTHORIZATION:

SAMPLE:

REPORT OF ANALYSIS

BASE/NEUTRAL EXTRACTS

micrograms/liter	Detection Limit	41	42	43	44	45
Acenaphthene	10	ND	ND	ND	ND	ND
Acenaphthylene	10	ND	ND	ND	ND	ND
Anthracene	10	ND	ND	ND	ND	ND
Benzidine	100	ND	ND	ND	ND	ND
Benzo(a)anthracene	10	ND	ND	ND	ND	ND
Benzo(a)pyrene	10	ND	ND	ND	ND	ND
3,4-Benzofluoranthene	10	ND	ND	ND	ND	ND
Benzo(ghi)perylene	25	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	10	ND	ND	ND	ND	ND
bis(2-chloroethoxy)methane	10	ND	ND	ND	ND	ND
bis(2-chloroethyl)ether	10	ND	ND	ND	ND	ND
bis(2-chloroisopropyl)ether	10	ND	ND	ND	ND	ND
bis(2-ethylhexyl)phthalate	10	ND	ND	ND	ND	ND
4-bromophenyl phenyl ether	10	ND	ND	ND	ND	ND
Butylbenzyl phthalate	10	ND	ND	ND	ND	ND
2-Chloronaphthalene	10	ND	ND	ND	ND	ND
4-Chlorophenyl phenyl ether	10	ND	ND	ND	ND	ND
Chrysene	10	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	25	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	10	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	10	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	10	ND	ND	ND	ND	ND
3,3'-Dichlorobenzidine	10	ND	ND	ND	ND	ND
Diethyl phthalate	10	ND	ND	ND	ND	ND
Dimethyl phthalate	10	ND	ND	ND	ND	ND
Di-n-butyl phthalate	10	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	10	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	10	ND	ND	ND	ND	ND
Di-n-octyl phthalate	10	ND	ND	ND	ND	ND
1,2-diphenylhydrazine (as azobenzene)	10	ND	ND	ND	ND	ND
Fluoranthene	10	ND	ND	ND	ND	ND

Asst. Organic Lab
Jon Gabry

JF mm

princeton testing laboratory

DATE: 6-24-85

JOB NO. 38140

AUTHORIZATION:

SAMPLE:

TO:

Fred C. Hart Assoc.
530 Fifth Ave
New York, NY 10036
ATT: Jim Meck

REPORT OF ANALYSIS

micrograms/liter — BASE/NEUTRAL EXTRACTS (con't)

	Detection limit	41	42	43	44	45
Fluorene	10	ND	ND	ND	ND	ND
Hexachlorobenzene	10	ND	ND	ND	ND	ND
Hexchlorobutadiene	10	ND	ND	ND	ND	ND
Hexachlorocyclopentadiene	10	ND	ND	ND	ND	ND
Hexachloroethane	10	ND	ND	ND	ND	ND
Ideno(1,2,3-cd)pyrene	25	ND	ND	ND	ND	ND
Isophorone	10	ND	ND	ND	ND	ND
Naphthalene	10	ND	ND	ND	ND	ND
Nitrobenzene	10	ND	ND	ND	ND	ND
N-nitrosodimethylamine	10	ND	ND	ND	ND	ND
N-nitrosodi-n-propylamine	10	ND	ND	ND	ND	ND
N-nitrosodiphenylamine	10	ND	ND	ND	ND	ND
Phenanthrene	10	ND	ND	ND	ND	ND
Pyrene	10	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	10	ND	ND	ND	ND	ND

Jon Gabry, PhD
Asst. Organic Lab. Mg

JG :mm

princeton testing laboratory

DATE: 6-24-85

TO:

Fred C. Hart Assoc.
530 Fifth Ave
New York, NY 1-036
ATT: Jim Meck

JOB NO. 38140

AUTHORIZATION:

SAMPLE:

REPORT OF ANALYSIS

PESTICIDES AND PCB'S

ug/l	Detection Limit	41	42	43	44	45
Aldrin	1	ND	ND	ND	ND	ND
BHC,Alpha	1	ND	ND	ND	ND	ND
BHC,Beta	1	ND	ND	ND	ND	ND
BHC,Gamma	1	ND	ND	ND	ND	ND
BHC,Delta	1	ND	ND	ND	ND	ND
Chlordane	1	ND	ND	ND	ND	ND
4,4'DDT	1	ND	ND	ND	ND	ND
4,4'DDE	1	ND	ND	ND	ND	ND
4,4'DDD	1	ND	ND	ND	ND	ND
Dieldrin	1	ND	ND	ND	ND	ND
Endosulfan-alpha	1	ND	ND	ND	ND	ND
Endosulfan-beta	1	ND	ND	ND	ND	ND
Endosulfan Sulfate	1	ND	ND	ND	ND	ND
Endrin	1	ND	ND	ND	ND	ND
Endrin Aldehyde	1	ND	ND	ND	ND	ND
Heptachlor	1	ND	ND	ND	ND	ND
Heptachlor epoxide	1	ND	ND	ND	ND	ND
PCB-1242	1	ND	ND	ND	ND	ND
PCB-1254	1	ND	ND	ND	ND	ND
PCB-1221	1	ND	ND	ND	ND	ND
PCB-1232	1	ND	ND	ND	ND	ND
PCB-1248	1	ND	ND	ND	ND	ND
PCB-1260	1	ND	ND	ND	ND	ND
PCB-1016	1	ND	ND	ND	ND	ND
Toxaphene	1	ND	ND	ND	ND	ND

Jon Gabry, PhD
Asst. Organic Lab. Mgr.

JG:mm

princeton testing laboratory

DATE: 6-21-85

TO: Fred C. Hart Assoc.
530 Fifth Ave
New York, NY 10036
ATT: Jim Meck

JOB NO. 38140

AUTHORIZATION:

SAMPLE: water

REPORT OF ANALYSIS

PRIORITY POLLUTANTS

#AF/GE83

	41	42	43	44	45
			mg/l		
Beryllium	<.01	<.01	<.01	<.01	<.01
Cadmium	<.01	<.01	<.01	<.01	<.01
Chromium	<.01	.01	.01	<.01	.01
Copper	.01	.03	.01	.01	.02
Nickel	.01	.03	.03	.02	.03
Lead	.11	.14	.13	.11	.14
Zinc	.06	.03	.03	.02	.03
Arsenic	<0.01	<0.01	<0.01	<0.01	<0.01
Silver	<.01	<.01	<.01	<.01	<.01
Antimony	.01	.04	.05	.03	.04
Selenium	<.01	<.01	<.01	<.01	.01
Thallium	<.05	<.05	<.05	<.05	<.05
Mercury	<.001	<.001	<.001	<.001	<.001
Cyanide	<0.01	<0.01	<0.01	<0.01	<0.01
Phenols	<0.1	<0.1	<0.1	<0.1	<0.1

pH, Conductivity- insufficient sample

sample received 4-25-85

Edna A. Alinea, Manager
Water, waste water & Microbiology

EAA: mm

Princeton Testing Laboratory
U.S. Route 1
Princeton Service Center
(609) 452-9050
P.O. Box 310K, Princeton, N.J. 08540

QUALITY CONTROL REPORT

Matrix Spike Analysis

JOB NO. 38140
ANALYST: JG
DATE: 6-21-85
MATRIX: MW
METHOD:

COMPOUND Sample ID	COMPOUND NAME	Sample Result (SR)	Spiked Sample Result (SSR)	Spike Added (SA)	% Recovery
41	Methylene chloride	ND	64	74	86
	1,1-Dichloroethylene	ND	58	55	105
	1,1-Dichloroethane	ND	63	60	105
	1,2-Dichloroethylene	ND	65	61	106
	Chloroform	ND	68	72	94
	1,2-Dichlorethane	ND	77	78	99
	1,1,1-Trichloroethylene	ND	63	54	117
	Carbon Tetrachloride	ND	71	57	124
	1,2-Dichloroepropane	ND	67	65	103
	Trichloroethylene	ND	62	55	112
	Tetrachloroethylene	ND	73	62	118
	Chlorobenzene	ND	48	47	102
	Benzene	ND	62	65	95
	Ethylbenzene	ND	60	54	111
	Toluene	ND	65	61	106
	m-xylene	ND	71	64	111
	p-xylene	ND	49	44	111
	m-D chlorobenzene	ND	86	75	114
	p-D chlorobenzene	ND	56	49	115

** Recovery = (SSR - SR) / SA × 100

Edison Testing Laboratory
U.S. Route 1
Princeton Service Center
(609) 452-9050
P.O. Box 1108, Princeton, N.J. 08540

QUALITY CONTROL REPORT

Duplicate Analysis

JOB NO 38140
ANALYST JG
DATE 6-21-85
MATRIX water
METHOD EPA 601/602

COMPOUND		CONCENTRATION (ug/l)		Relative Percent Difference (RPD)*
Sample ID	COMPOUND NAME	Run 1 (D_1)	Run 2 (D_2)	
44	Methylene Chloride	51	ND	200
	1,1,1-Trichloroethane	<2	<2	0
	Tetrachloroethylene	<2	<2	0
	Benzene	<1	<1	0

$$*RPD = \frac{(D_1 - D_2)}{\left[\frac{(D_1 + D_2)}{2}\right]} \times 100$$

Princeton Service Center
U.S. Route 1
(609) 452-9060
Tlx-84-3942

princeton testing laboratory

Fred C. Hart

JOB: #38180

June 17, 1985

	Method Detection Limit	ug/l #50	#51	#52	#53	#54	Trip Blank
Chloromethane	2	ND	ND	ND	ND	ND	ND
Bromomethane	10	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	5	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	ND	ND	ND	8.0	<2	<2
Chloroethane	2	ND	ND	ND	ND	ND	ND
Methylene chloride	5	< 5	< 5	< 5	< 5	< 5	ND
Trichlorofluoromethane	5	ND	ND	ND	ND	ND	ND
1,1-dichloroethene	1	< 1	ND	5.9	ND	5.2	ND
1,1-dichloroethane	1	11	ND	110	ND	ND	ND
trans-1,2-dichloroethene	1	ND	ND	ND	ND	8.1	< 2
Chloroform	2	< 2	ND	ND	ND	ND	ND
1,2-dichloroethane	1	ND	ND	ND	ND	ND	ND
1,1,1-trichloroethane	2	2.8	ND	ND	ND	< 2	ND
Carbon tetrachloride	2	ND	ND	ND	ND	ND	ND
Bromodichloromethane	2	ND	ND	ND	ND	ND	ND
1,2-dichloropropane	1	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	5	ND	ND	ND	ND	ND	ND
Trichloroethene	2	< 2	< 2	< 2	ND	7.2	ND
Dibromochloromethane	2	ND	ND	ND	ND	ND	ND
1,1,2-trichloroethane	5	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	5	ND	ND	ND	ND	ND	ND
2-chloroethylvinylether	5	ND	ND	ND	ND	ND	ND
Bromoform	10	ND	ND	ND	ND	ND	ND
1,1,2,2-tetrachloroethane	10	ND	ND	ND	ND	ND	ND
Tetrachloroethene	2	< 2	ND	ND	ND	6.3	ND
Benzene	1	< 1	ND	< 1	< 1	< 1	ND
Toluene	1	< 1	ND	< 1	< 1	< 1	ND
Chlorobenzene	1	ND	ND	ND	ND	ND	ND
Ethylbenzene	1	ND	ND	ND	ND	ND	ND
1,3-dichlorobenzene	1	ND	ND	ND	ND	ND	ND
1,2-dichlorobenzene	1	ND	ND	ND	ND	ND	ND
1,4-dichlorobenzene	1	ND	6.6	ND	ND	ND	ND
xylenes	1	2.3	ND	< 1	< 1	ND	ND

ND=not detected

Jon Gabry, PhD, Asst.Organic Lab.M

JG/rk

princeton testing laboratory

DATE: June 17, 1985

TO: Fred C. Hart
530 Fifth Avenue
New York, NY 10036

JOB NO. 38180

AUTHORIZATION: verbal

SAMPLE: Water - 4

REPORT OF ANALYSIS

ACID EXTRACTS

(Sample #52 was broken)	Method Detection Limit	ug/l #50	#51	#53	#54
2-Chlorophenol	25	ND	ND	ND	ND
2,4-Dichlorophenol	25	ND	ND	ND	ND
2,4-Dimethylphenol	25	ND	ND	ND	ND
4,6-Dinitro-o-cresol	250	ND	ND	ND	ND
2,4-Dinitrophenol	250	ND	ND	ND	ND
2-Nitrophenol	25	ND	ND	ND	ND
4-Nitrophenol	25	ND	ND	ND	ND
p-chloro-m-cresol	25	ND	ND	ND	ND
Pentachlorophenol	25	ND	ND	ND	ND
Phenol	25	ND	ND	ND	ND
2,4,6-Trichlorophenol	25	ND	ND	ND	ND

ND = not detected
Method-EPA 625
Matrix-Water

Sample #52 was broken enroute to our facility.

Jon Gabry, PhD,
Asst. Organic Lab. Mgr.

JG/rk

princeton testing laboratory

DATE: June 17, 1985

TO: Fred C. Hart
530 Fifth Ave.
New York, New York 10036

JOB NO. 38180

AUTHORIZATION: verbal

SAMPLE: Water - 4

REPORT OF ANALYSIS

BASE/NEUTRAL EXTRACTS

(Sample) (#52 Broken)	Method Detection Limit	#50	#51	#53	#54
		ug/l			
Acenaphthene	10	ND	ND	ND	ND
Acenaphthylene	10	ND	ND	ND	ND
Anthracene	10	ND	ND	ND	ND
Benzidine	100	ND	ND	ND	ND
Benzo(a)anthracene	10	ND	ND	ND	ND
Benzo(a)pyrene	10	ND	ND	ND	ND
3,4-Benzofluoranthene	10	ND	ND	ND	ND
Benzo(ghi)perylene	25	ND	ND	ND	ND
Benzo(k)fluoranthene	10	ND	ND	ND	ND
bis(2-chloroethoxy)methane	10	ND	ND	ND	ND
bis(2-chloroethyl)ether	10	ND	ND	ND	ND
bis(2-chloroisopropyl)ether	10	ND	ND	ND	ND
bis(2-ethylhexyl)phthalate	10	ND	ND	ND	ND
4-bromophenyl phenyl ether	10	ND	ND	ND	ND
Butylbenzyl phthalate	10	ND	ND	ND	ND
2-Chloronaphthalene	10	ND	ND	ND	ND
4-Chlorophenyl phenyl ether	10	ND	ND	ND	ND
Chrysene	10	ND	ND	ND	ND
Dibenzo(a,h)anthracene	25	ND	ND	ND	ND
1,2-Dichlorobenzene	10	ND	ND	ND	ND
1,3-Dichlorobenzene	10	ND	ND	ND	ND
1,4-Dichlorobenzene	10	ND	ND	ND	ND
3,3'-Dichlorobenzidine	10	ND	ND	ND	ND
Diethyl phthalate	10	ND	ND	ND	ND
Dimethyl phthalate	10	ND	ND	ND	ND
Di-n-butyl phthalate	10	ND	ND	ND	ND
2,4-Dinitrotoluene	10	ND	ND	ND	ND
2,6-Dinitrotoluene	10	ND	ND	ND	ND
Di-n-octyl phthalate	10	ND	ND	ND	ND
1,2-diphenylhydrazine (as azobenzene)	10	ND	ND	ND	ND
Fluoranthene	10	ND	ND	ND	ND

Jon Gabry, PhD, Asst. Organic Lab Mgr

JG/rk

princeton testing laboratory

DATE: June 17, 1985

TO: Fred C. Hart
530 Fifth Ave.
New York, NY 10036

JOB NO. 38180

AUTHORIZATION: verbal

SAMPLE: Water - 4

REPORT OF ANALYSIS

BASE/NEUTRAL EXTRACTS (con't)

(Sample #52 - Broken)	Method Detection Limit	ug/l #50	#51	#53	#54
Fluorene	10	ND	ND	ND	ND
Hexachlorobenzene	10	ND	ND	ND	ND
Hexchlorobutadiene	10	ND	ND	ND	ND
Hexachlorocyclopentadiene	10	ND	ND	ND	ND
Hexachloroethane	10	ND	ND	ND	ND
Ideno(1,2,3-cd)pyrene	25	ND	ND	ND	ND
Isophorone	10	ND	ND	ND	ND
Naphthalene	10	ND	ND	ND	ND
Nitrobenzene	10	ND	ND	ND	ND
N-nitrosodimethylamine	10	ND	ND	ND	ND
N-nitrosodi-n-propylamine	10	ND	ND	ND	ND
N-nitrosodiphenylamine	10	ND	ND	ND	ND
Phenanthrene	10	ND	ND	ND	ND
Pyrene	10	ND	ND	ND	ND
1,2,4-Trichlorobenzene	10	ND	ND	ND	ND

ND = not detected
Method= EPA 625
Matrix= Water

Jon Gabry, PhD,
Asst. Organic Lab. Mgr.

NOTE: Sample #52 was broken en route to our facility

JG/rk

laboratory

JUN 28 1985

DATE 6-21-85

JOB NO 38180

AUTHORIZATION verbal

TO:

Fred C. Hart Associates
530 Fifth Ave
New York NY 10036

ATT: Jim Meck

SAMPLE: water

REPORT OF ANALYSIS

PESTICIDES AND PCB'S

	Detection Limit	#50	#51	#53	#54
		ug/l			
Aldrin	1	ND	ND	ND	ND
BHC,Alpha	1	ND	ND	ND	ND
BHC,Beta	1	ND	ND	ND	ND
BHC,Gamma	1	ND	ND	ND	ND
BHC,Delta	1	ND	ND	ND	ND
Chlordane	1	ND	ND	ND	ND
4,4'DDT	1	ND	ND	ND	ND
4,4'DDE	1	ND	ND	ND	ND
4,4'DDD	1	ND	ND	ND	ND
Dieldrin	1	ND	ND	ND	ND
Endosulfan-alpha	1	ND	ND	ND	ND
Endosulfan-beta	1	ND	ND	ND	ND
Endosulfan sulfate	1	ND	ND	ND	ND
Endrin	1	ND	ND	ND	ND
Endrin Aldehyde	1	ND	ND	ND	ND
Heptachlor	1	ND	ND	ND	ND
Heptachlor epoxide	1	ND	ND	ND	ND
PCB-1242	5	ND	ND	ND	ND
PCB-1254	5	ND	ND	ND	ND
PCB-1221	5	ND	ND	ND	ND
PCB-1232	5	ND	ND	ND	ND
PCB-1248	5	ND	ND	ND	ND
PCB-1260	5	ND	ND	ND	ND
PCB-1016	5	ND	ND	ND	ND
Toxaphene	5	ND	ND	ND	ND

Jon Gabry, PhD
Asst.Organic Lab Manager

MK:na

princeton testing laboratory

DATE: 6-17-85

JOB NO. 38180

AUTHORIZATION: verbal

SAMPLE: water - 5

TO:

Fred C. Hart Associates
530 Fifth Ave
New York NY 10036

REPORT OF ANALYSIS

	50	51	52	53	54
			mg/l		
Beryllium	< .02	< .02	< .02	< .02	< .02
Cadmium	< .01	< .01	< .01	< .01	< .01
Chromium	.67	.50	5.75	.02	< .02
Copper	.59	.18	.17	< .02	< .02
Nickel	.80	.33	.81	.02	.01
Lead	.39	.25	.30	.02	< .02
Zinc	3.13	22.5	22.7	.08	.04
Arsenic	<0.01	<0.01	<0.01	<0.01	<0.01
Silver	< .01	< .01	< .01	< .01	< .01
Selenium	< .01	< .01	< .01	< .01	< .01
Antimony	14.1	3.95	2.82	.14	.10
Thallium	< .02	< .02	< .02	< .02	< .02
Merucury	< .001	< .001	< .001	< .001	< .001
Cyanide	<0.01	<0.01	0.027	<0.01	<0.01
Phenols	0.16	<0.1	0.11	<0.1	<0.1

Edna A. Alinea, Manager
Water, waste water & microbiology

EAA:na

princeton testing laboratory

U.S. Route 1
Princeton Service Center
(609) 452-9050

P.O. Box 3108, Princeton, N.J. 08540

QUALITY CONTROL REPORT

Matrix Spike Analysis

JOB NO: 38180
ANALYST: RVD
DATE: 6/17/85
MATRIX: PE/MW
METHOD:

COMPOUND					%
Sample ID	COMPOUND NAME	Sample Result (SR)	Spiked Sample Result (SSR)	Spike Added (SA)	Recovery*
851	Trichloroethylene	0	142	140	102
	Tetrachloroethylene	0	151	151	100

*% Recovery = $\frac{(SSR - SR)}{SA} \times 100$

Johnson Testing Laboratory

U.S. Route 1
Princeton Service Center
(609) 452-9850

P.O. Box 310N, Princeton, N.J. 08540

QUALITY CONTROL REPORT

Duplicate Analysis

JOB NO 38180
ANALYST J. Gabry
DATE 6/17/85
MATRIX MW
METHOD 601/602

COMPOUND		CONCENTRATION (ug/l)		Relative Percent Difference (RPD)*
Sample ID	COMPOUND NAME	Run 1 (D_1)	Run 2 (D_2)	
#52	1,1-Dichloroethylene	5.9	5.8	1.7
	1,1-Dichloroethane	106	107	0.9
	Benzene	< 1	< 1	0
	Toluene	< 1	< 1	0
	m-xylene	< 1	< 1	0
	Methylene Chloride	< 5	< 5	0
	Trichloroethylene	< 2	< 2	0

$$*RPD = \frac{(D_1 - D_2)}{\left[\frac{(D_1 + D_2)}{2}\right]} \times 100$$

Princeton Service Center
U.S. Route 1
(609) 452-9060
Tlx 44-3942

princeton testing laboratory

P.O. Box [illegible] Princeton, N.J. [illegible]

6-21-85
J# 38420

	Detection Limit	#55
Chloromethane	2	ND
Bromomethane	10	ND
Dichlorodifluoromethane	5	ND
Vinyl Chloride	2	4.0
Chloroethane	2	ND
Methylene chloride	5	<5
Trichlorofluoromethane	5	ND
1,1-dichloroethene	1	ND
1,1-dichloroethane	1	ND
trans-1,2-dichloroethene	1	ND
Chloroform	2	ND
1,2-dichloroethane	1	ND
1,1,1-trichloroethane	2	ND
Carbon tetrachloride	2	ND
Bromodichloromethane	2	ND
1,2-dichloropropane	1	ND
trans-1,3-dichloropropene	5	ND
Trichloroethene	2	ND
Dibromochloromethane	2	ND
1,1,2-trichloroethane	5	ND
cis-1,3-dichloropropene	5	ND
2-chloroethylvinylether	5	ND
Bromoform	10	ND
1,1,2,2-tetrachloroethane	10	ND
Tetrachloroethene	2	ND
Benzene	1	ND
Toluene	1	ND
Chlorobenzene	1	ND
Ethylbenzene	1	ND
1,3-dichlorobenzene	1	ND
1,2-dichlorobenzene	1	ND
1,4-dichlorobenzene	1	ND

ND=not detected

Jon Gabry, PhD
Asst. Organic Lab. Mgr.

JG mm

princeton testing laboratory

DATE: 6-21-85

JOB NO. 38420

AUTHORIZATION:

SAMPLE: water

TO: Fred C. Hart Assoc.
530 Fifth Ave
New York, NY 10036
ATT: Jim Meck

REPORT OF ANALYSIS

ACID EXTRACTS

micrograms/liter	Detection Limit	#55
2-Chlorophenol	25	ND
2,4-Dichlorophenol	25	ND
2,4-Dimethylphenol	25	ND
4,6-Dinitro-o-cresol	250	ND
2,4-Dinitrophenol	250	ND
2-Nitrophenol	25	ND
4-Nitrophenol	25	ND
p-chloro-m-cresol	25	ND
Pentachlorophenol	25	ND
Phenol	25	ND
2,4,6-Trichlorophenol	25	ND

Jon Gabry, PHd
Asst. Organic Lab. Manager

JG:mm

princeton testing laboratory

DATE: 6-21-85

TO:
Fred C. Hart Assoc.
530 Fifth Ave
New York, NY 1-036
ATT: Jim Meck

JOB NO. 38420

AUTHORIZATION:

SAMPLE: water

REPORT OF ANALYSIS

BASE/NEUTRAL EXTRACTS

micrograms/liter	Detection Limit	#55
Acenaphthene	10	ND
Acenaphthylene	10	ND
Anthracene	10	ND
Benzidine	100	ND
Benzo(a)anthracene	10	ND
Benzo(a)pyrene	10	ND
3,4-Benzofluoranthene	10	ND
Benzo(ghi)perylene	25	ND
Benzo(k)fluoranthene	10	ND
bis(2-chloroethoxy)methane	10	ND
bis(2-chloroethyl)ether	10	ND
bis(2-chloroisopropyl)ether	10	ND
bis(2-ethylhexyl)phthalate	10	88
4-bromophenyl phenyl ether	10	ND
Butylbenzyl phthalate	10	ND
2-Chloronaphthalene	10	ND
4-Chlorophenyl phenyl ether	10	ND
Chrysene	10	ND
Dibenzo(a,h)anthracene	25	ND
1,2-Dichlorobenzene	10	ND
1,3-Dichlorobenzene	10	ND
1,4-Dichlorobenzene	10	ND
3,3'-Dichlorobenzidine	10	ND
Diethyl phthalate	10	ND
Dimethyl phthalate	10	ND
Di-n-butyl phthalate	10	ND
2,4-Dinitrotoluene	10	ND
2,6-Dinitrotoluene	10	ND
Di-n-octyl phthalate	10	ND
1,2-diphenylhydrazine (as azobenzene)	10	ND
Fluoranthene	10	ND

JG:mm

Jon Gabry, PhD
Asst. Organic Lab. Mgr.

arthen testing laboratory

DATE: 6-21-85

TO: Fred C. Hart Assoc.
530 Fifth Ave
New York, NY 10036
ATT: Jim Meck

JOB NO. 38420

AUTHORIZATION:

SAMPLE: water

REPORT OF ANALYSIS

BASE/NEUTRAL EXTRACTS (con't)

micrograms/liter	Detection Limit	#55
Fluorene	10	ND
Hexachlorobenzene	10	ND
Hexchlorobutadiene	10	ND
Hexachlorocyclopentadiene	10	ND
Hexachloroethane	10	ND
Indeno(1,2,3-cd)pyrene	25	ND
Isophorone	10	ND
Naphthalene	10	ND
Nitrobenzene	10	ND
N-nitrosodimethylamine	10	ND
N-nitrosodi-n-propylamine	10	ND
N-nitrosodiphenylamine	10	ND
Phenanthrene	10	ND
Pyrene	10	ND
1,2,4-Trichlorobenzene	10	ND

Jon Gabry, PhD
Asst. Organic Lab. Manager

JG:mm

environmental testing laboratory

DATE: 6-21-85

TO: Fred C. Hart Assoc.
530 Fifth Ave
New York, NY 10036
ATT: Jim Meck

JOB NO. 38420

AUTHORIZATION:

SAMPLE: water

REPORT OF ANALYSIS

PESTICIDES AND PCB'S

micrograms/liter	MDL	#55
Aldrin	1	ND
BHC,Alpha	1	ND
BHC,Beta	1	ND
BHC,Gamma	1	ND
BHC,Delta	1	ND
Chlordane	2	ND
4,4'DDT	1	ND
4,4'DDE	1	ND
4,4'DDD	1	ND
Dieldrin	1	ND
Endosulfan-alpha	1	ND
Endosulfan-beta	1	ND
Endosulfan Sulfate	1	ND
Endrin	1	ND
Endrin Aldehyde	1	ND
Heptachlor	1	ND
Heptachlor epoxide	1	ND
PCB-1242	5	ND
PCB-1254	5	ND
PCB-1221	5	ND
PCB-1232	5	ND
PCB-1248	5	ND
PCB-1260	5	ND
PCB-1016	5	ND
Toxaphene	5	ND

Jon Gabry, PhD
Asst. Organic Lab. Mgr.

JG:mm

arneson
testing
laboratory

DATE: 6-21-85

TO: Fred C. Hart Assoc.
530 Fifth Ave
New York, NY 10036
ATT: Jim Meck

JOB NO. 38420

AUTHORIZATION:

SAMPLE: water

REPORT OF ANALYSIS

PRIORITY POLLUTANTS

AFIGE 83 SW -4,GW
Hart 55

	mg/l
Beryllium	<.01
Cadmium	<0.01
Chromium	.03
Copper	<.01
Nickel	.10
Lead	.63
Zinc	.63
Arsenic	<0.01
Silver	<.01
Antimony	.45
Selenium	<.01
Thallium	<.05
Mercury	<.001
Cyanide	<0.01
Phenols	<0.1

sample received 5-13-85

Edna A. Alinea, Manager
Water,waste water & Microbiology

EAA:mm

Princeton Service Center
U.S Route 1
(609) 452-9060
Tlx 84-3942

princeton testing laboratory

Job 38179
6-21-85

	MDL	56	58	59	60	61	57
Chloromethane	2	ND	ND	ND	ND	ND	ND
Bromomethane	10	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	5	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	ND	ND	ND	ND	ND	6.4
Chloroethane	2	ND	14	ND	ND	ND	ND
Methylene chloride	5	<5	<5	<5	<5	<5	<5
Trichlorofluoromethane	5	ND	ND	ND	ND	ND	<5
1,1-dichloroethene	1	ND	29	ND	ND	ND	11
1,1-dichloroethane	1	21	130	23	ND	ND	63
trans-1,2-dichloroethene	1	ND	ND	ND	ND	ND	6.9
Chloroform	2	ND	ND	ND	ND	ND	ND
1,2-dichloroethane	1	ND	ND	ND	ND	ND	ND
1,1,1-trichloroethane	2	ND	ND	ND	ND	6.2	9.1
Carbon tetrachloride	2	ND	ND	ND	ND	ND	ND
Bromodichloromethane	2	ND	ND	ND	ND	ND	ND
1,2-dichloropropane	1	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	5	ND	ND	ND	ND	ND	ND
Trichloroethene	2	ND	<2	ND	ND	ND	8.6
Dibromochloromethane	2	ND	ND	ND	ND	ND	ND
1,1,2-trichloroethane	5	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	5	ND	ND	ND	ND	ND	ND
2-chloroethylvinylether	5	ND	ND	ND	ND	ND	ND
Bromoform	10	ND	ND	ND	ND	ND	ND
1,1,2,2-tetrachloroethane	10	ND	ND	ND	ND	ND	ND
Tetrachloroethene	2	ND	ND	ND	ND	ND	3.4
Benzene	1	ND	ND	ND	ND	ND	<1
Toluene	1	ND	2.2	ND	ND	ND	<1
Chlorobenzene	1	ND	ND	ND	ND	ND	ND
Ethylbenzene	1	ND	ND	ND	ND	ND	ND
1,3-dichlorobenzene	1	ND	ND	ND	ND	ND	ND
1,2-dichlorobenzene	1	ND	ND	ND	ND	ND	ND
1,4-dichlorobenzene	1	ND	ND	ND	ND	ND	ND
xylenes	1	ND	1.5	ND	ND	ND	<1

ND=not detected

Jon Gabry, PhD
Asst. Organic Lab. Mgr.

JG:mm

testing laboratory

DATE: 6-21-85

TO:
Fred C. Hart Assoc.
530 Fifth Ave
New York, NY 10036
ATT: Jim Meck

JOB NO. 38179

AUTHORIZATION:

SAMPLE: water

REPORT OF ANALYSIS

ACID EXTRACTS

micrograms/liter	Detection Limit	56	57	58
2-Chlorophenol	25	ND	ND	ND
2,4-Dichlorophenol	25	ND	ND	ND
2,4-Dimethylphenol	25	ND	ND	ND
4,6-Dinitro-o-cresol	250	ND	ND	ND
2,4-Dinitrophenol	250	ND	ND	ND
2-Nitrophenol	25	ND	ND	ND
4-Nitrophenol	25	ND	ND	ND
p-chloro-m-cresol	25	ND	ND	ND
Pentachlorophenol	25	ND	ND	ND
Phenol	25	ND	ND	ND
2,4,6-Trichlorophenol	25	ND	ND	ND

Jon Gabry, PhD
Asst. Organic Lab. Mgr.

JG:mm

princeton testing laboratory

DATE: 6-21-85

TO: Fred C. Hart Assoc.
530 Fifth Ave
New York, NY 10036
ATT: Jim Meck

JOB NO. 38179

AUTHORIZATION:

SAMPLE: water

REPORT OF ANALYSIS

ACID EXTRACTS

micrograms/liter	Detection Limit	59	Field Bl 1 60	Field Bl 2 61
2-Chlorophenol	25	ND	ND	ND
2,4-Dichlorophenol	25	ND	ND	ND
2,4-Dimethylphenol	25	ND	ND	ND
4,6-Dinitro-o-cresol	250	ND	ND	ND
2,4-Dinitrophenol	250	ND	ND	ND
2-Nitrophenol	25	ND	ND	ND
4-Nitrophenol	25	ND	ND	ND
p-chloro-m-cresol	25	ND	ND	ND
Pentachlorophenol	25	ND	ND	ND
Phenol	25	ND	ND	ND
2,4,6-Trichlorophenol	25	ND	ND	ND

Jon Gabry, PhD
Asst. Organic Lab. Mgr.

JG:mm

princeton testing laboratory

DATE: 6-21-85

TO:
Fred C. Hart Assoc.
530 Fifth Ave
New York, NY 10036
ATT: Jim Meck

JOB NO. 38179

AUTHORIZATION:

SAMPLE: water

REPORT OF ANALYSIS

BASE/NEUTRAL EXTRACTS

micrograms/liter

	Detection Limit	56	57	58
Acenaphthene	10	ND	ND	ND
Acenaphthylene	10	ND	ND	ND
Anthracene	10	ND	ND	ND
Benzidine	100	ND	ND	ND
Benzo(a)anthracene	10	ND	ND	ND
Benzo(a)pyrene	10	ND	ND	ND
3,4-Benzofluoranthene	10	ND	ND	ND
Benzo(ghi)perylene	25	ND	ND	ND
Benzo(k)fluoranthene	10	ND	ND	ND
bis(2-chloroethoxy)methane	10	ND	ND	ND
bis(2-chloroethyl)ether	10	ND	ND	ND
bis(2-chloroisopropyl)ether	10	ND	ND	ND
bis(2-ethylhexyl)phthalate	10	48	ND	ND
4-bromophenyl phenyl ether	10	ND	ND	ND
Butylbenzyl phthalate	10	ND	ND	ND
2-Chloronaphthalene	10	ND	ND	ND
4-Chlorophenyl phenyl ether	10	ND	ND	ND
Chrysene	10	ND	ND	ND
Dibenzo(a,h)anthracene	25	ND	ND	ND
1,2-Dichlorobenzene	10	ND	ND	ND
1,3-Dichlorobenzene	10	ND	ND	ND
1,4-Dichlorobenzene	10	ND	ND	ND
3,3'-Dichlorobenzidine	10	ND	ND	ND
Diethyl phthalate	10	ND	ND	ND
Dimethyl phthalate	10	ND	ND	ND
Di-n-butyl phthalate	10	ND	ND	ND
2,4-Dinitrotoluene	10	ND	ND	ND
2,6-Dinitrotoluene	10	ND	ND	ND
Di-n-octyl phthalate	10	ND	ND	ND
1,2-diphenylhydrazine (as azobenzene)	10	ND	ND	ND
Fluoranthene	10	ND	ND	ND

Jon Gabry, PhD
Asst. Organic Lab. Mgr.

JG:mm

princeton testing laboratory

DATE: 6-21-85

TO: Fred C. Hart Assoc.
530 Fifth Ave
New York, NY 10036
ATT: Jim Meck

JOB NO. 38179

AUTHORIZATION:

SAMPLE: water

REPORT OF ANALYSIS

micrograms/liter — BASE/NEUTRAL EXTRACTS (con't)

	Detection Limit	56	57	58
Fluorene	10	ND	ND	ND
Hexachlorobenzene	10	ND	ND	ND
Hexchlorobutadiene	10	ND	ND	ND
Hexachlorocyclopentadiene	10	ND	ND	ND
Hexachloroethane	10	ND	ND	ND
Ideno(1,2,3-cd)pyrene	25	ND	ND	ND
Isophorone	10	ND	ND	ND
Naphthalene	10	ND	ND	ND
Nitrobenzene	10	ND	ND	ND
N-nitrosodimethylamine	10	ND	ND	ND
N-nitrosodi-n-propylamine	10	ND	ND	ND
N-nitrosodiphenylamine	10	ND	ND	ND
Phenanthrene	10	ND	ND	ND
Pyrene	10	ND	ND	ND
1,2,4-Trichlorobenzene	10	ND	ND	ND

Jon Gabry, PhD
Asst. Organic Lab. Mgr.

WF.mm

princeton testing laboratory

DATE: 6-21-85

TO:

Fred C. Hart Assoc.
530 Fifth Ave
New York, NY 10036
ATT: Jim Meck

JOB NO. 38179

AUTHORIZATION:

SAMPLE: water

REPORT OF ANALYSIS

BASE/NEUTRAL EXTRACTS

Micrograms/liter	Detection Limit	59	60 Field Blank 1	61 Field Blank 2
Acenaphthene	10	ND	ND	ND
Acenaphthylene	10	ND	ND	ND
Anthracene	10	ND	ND	ND
Benzidine	100	ND	ND	ND
Benzo(a)anthracene	10	ND	ND	ND
Benzo(a)pyrene	10	ND	ND	ND
3,4-Benzofluoranthene	10	ND	ND	ND
Benzo(ghi)perylene	25	ND	ND	ND
Benzo(k)fluoranthene	10	ND	ND	ND
bis(2-chloroethoxy)methane	10	ND	ND	ND
bis(2-chloroethyl)ether	10	ND	ND	ND
bis(2-chloroisopropyl)ether	10	ND	ND	ND
bis(2-ethylhexyl)phthalate	10	ND	ND	ND
4-bromophenyl phenyl ether	10	ND	ND	ND
Butylbenzyl phthalate	10	ND	ND	ND
2-Chloronaphthalene	10	ND	ND	ND
4-Chlorophenyl phenyl ether	10	ND	ND	ND
Chrysene	10	ND	ND	ND
Dibenzo(a,h)anthracene	25	ND	ND	ND
1,2-Dichlorobenzene	10	ND	ND	ND
1,3-Dichlorobenzene	10	ND	ND	ND
1,4-Dichlorobenzene	10	ND	ND	ND
3,3'-Dichlorobenzidine	10	ND	ND	ND
Diethyl phthalate	10	ND	ND	ND
Dimethyl phthalate	10	ND	ND	ND
Di-n-butyl phthalate	10	ND	ND	ND
2,4-Dinitrotoluene	10	ND	ND	ND
2,6-Dinitrotoluene	10	ND	ND	ND
Di-n-octyl phthalate	10	ND	ND	ND
1,2-diphenylhydrazine (as azobenzene)	10	ND	ND	ND
Fluoranthene	10	ND	ND	ND

JGF mm

Jon Gabry, PhD
Asst. Organic Lab. Mgr.

American
Testing
Laboratory

DATE: 6-21-85

JOB NO. 38179

AUTHORIZATION:

SAMPLE: water

TO:
Fred C. Hart Assoc.
530 Fifth Ave
New York, NY 10036
ATT: Jim Meck

REPORT OF ANALYSIS

BASE/NEUTRAL EXTRACTS (con't)

micrograms/liter	Detection Limit	59	Field Blank 1 60	Field Blank 2 61
Fluorene	10	ND	ND	ND
Hexachlorobenzene	10	ND	ND	ND
Hexchlorobutadiene	10	ND	ND	ND
Hexachlorocyclopentadiene	10	ND	ND	ND
Hexachloroethane	10	ND	ND	ND
Ideno(1,2,3-cd)pyrene	25	ND	ND	ND
Isophorone	10	ND	ND	ND
Naphthalene	10	ND	ND	ND
Nitrobenzene	10	ND	ND	ND
N-nitrosodimethylamine	10	ND	ND	ND
N-nitrosodi-n-propylamine	10	ND	ND	ND
N-nitrosodiphenylamine	10	ND	ND	ND
Phenanthrene	10	ND	ND	ND
Pyrene	10	ND	ND	ND
1,2,4-Trichlorobenzene	10	ND	ND	ND

Jon Gabry, PhD
Asst. Organic Lab. Mgr.

JG mm

[illegible] testing laboratory

DATE: 6-21-85

TO: Fred C. Hart Assoc.
530 Fifth Ave
New York, NY 10036
ATT: Jim Meck

JOB NO. 38179

AUTHORIZATION:

SAMPLE: water

REPORT OF ANALYSIS

PESTICIDES AND PCB'S

ug/g	MDL	56	57	58	59	FB1 60	FB2 61
Aldrin	1	ND	ND	ND	ND	ND	ND
BHC,Alpha	1	ND	ND	ND	ND	ND	ND
BHC,Beta	1	ND	ND	ND	ND	ND	ND
BHC,Gamma	1	ND	ND	ND	ND	ND	ND
BHC,Delta	1	ND	ND	ND	ND	ND	ND
Chlordane	1	ND	ND	ND	ND	ND	ND
4,4'DDT	1	ND	ND	ND	ND	ND	ND
4,4'DDE	1	ND	ND	ND	ND	ND	ND
4,4'DDD	1	ND	ND	ND	ND	ND	ND
Dieldrin	1	ND	ND	ND	ND	ND	ND
Endosulfan-alpha	1	ND	ND	ND	ND	ND	ND
Endosulfan-beta	1	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	1	ND	ND	ND	ND	ND	ND
Endrin	1	ND	ND	ND	ND	ND	ND
Endrin Aldehyde	1	ND	ND	ND	ND	ND	ND
Heptachlor	1	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	1	ND	ND	ND	ND	ND	ND
PCB-1242	1	ND	ND	ND	ND	ND	ND
PCB-1254	1	ND	ND	ND	ND	ND	ND
PCB-1221	1	ND	ND	ND	ND	ND	ND
PCB-1232	1	ND	ND	ND	ND	ND	ND
PCB-1248	1	ND	ND	ND	ND	ND	ND
PCB-1260	1	ND	ND	ND	ND	ND	ND
PCB-1016	1	ND	ND	ND	ND	ND	ND
Toxaphene	1	ND	ND	ND	ND	ND	ND

Jon Gabry, PhD
Asst. Organic Lab. Mgr.

JG:mm

arneson
testing
laboratory

DATE: 6-24-85

TO: Fred C. Hart Assoc.
530 Fifth Ave
New York, NY 10036
ATT: Jim Meck

JOB NO. 38179

AUTHORIZATION:

SAMPLE: water

REPORT OF ANALYSIS

PRIORITY POLLUTANTS

	56	57	58	59	60	61
			mg/l			
Beryllium	<.02	<.02	<.02	<.02	<.02	<.02
Cadmium	<.01	.01	<.01	<.01	<.01	<.01
Chromium	.11	.62	.26	.16	<.02	<.02
Copper	.03	.44	.07	.05	<.02	.02
Nickel	.06	.71	.11	.09	<.01	<.01
Lead	.03	.38	.10	.06	<.02	<.02
Zinc	.19	2.54	.33	.27	.01	.01
Arsenic	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Silver	<.01	.01	<.01	<.01	<.01	<.01
Antimony	.66	8.61	1.54	1.23	.06	.05
Selenium	<.01	<.01	<.01	<.01	<.01	<.01
Thallium	<.02	<.02	<.02	<.02	<.02	<.02
Mercury	<.001	<.001	<.001	<.001	<.001	<.001
Cyanide	<0.01		<0.01	<0.01	0.02	0.012
Phenols	<0.1		<0.1	<0.1	0.11	<0.1

57 Cyanide and Phenols were broken

Edna A. Allred, Manager
Water, waste water & Micro-
biology

EAA:mm

Princeton Testing Laboratory

U.S. Route 1
Princeton Service Center
(609) 452-9050

P.O. Box 3108, Princeton, N.J. 08540

QUALITY CONTROL REPORT

Duplicate Analysis

JOB NO: 38179
ANALYST: JG
DATE: 6-24-85
MATRIX: MW
METHOD: 601/602

COMPOUND		CONCENTRATION (ug/l)		Relative Percent Difference (RPD)*
Sample ID	COMPOUND NAME	Run 1 (D_1)	Run 2 (D_2)	
58	Chloroethane	14	19	30
	Methylene chloride	2.7	1.9	35
	1,1-Dichloroethylene	29	32	9.8
	Trichlorcethylene	1.9	1.7	11
	Toluene	2.2	2.9	27
	Xylenes	1.1	1.0	9.5
60	Methylene cloride	2.0	1.4	35

$$*RPD = \frac{(D_1 - D_2)}{\left[\frac{(D_1 + D_2)}{2}\right]} \times 100$$

Edison Testing Laboratory

U.S. Route 1
Princeton Service Center
(609) 452-9050

P.O. Box 310K, Princeton, N.J. 08540

QUALITY CONTROL REPORT

Duplicate Analysis

JOB NO 38179
ANALYST S.V.
DATE 6-21-85
MATRIX Water
METHOD 625

COMPOUND		CONCENTRATION (ug/l)		Relative Percent Difference (RPD)*
Sample ID	COMPOUND NAME	Run 1 (D_1)	Run 2 (D_2)	
#61 (field blank 2)	All semi-volatiles (GC/MS)	ND	ND	0

$$*RPD = \left[\frac{(D_1 - D_2)}{(D_1 + D_2)/2}\right] \times 100$$

Princeton Testing Laboratory

U.S. Route 1
Princeton Service Center
(609) 452-9050

P.O. Box 1108, Princeton, N.J. 08540

QUALITY CONTROL REPORT

Matrix Spike Analysis

JOB NO 38179
ANALYST RVD
DATE 6-24-85
MATRIX PE/MW
METHOD

COMPOUND Sample ID	COMPOUND NAME	Sample Result (SR)	Spiked Sample Result (SSR)	Spike Added (SA)	% Recovery*
59	Trichloroethylene	0	189	140	135
	Tetrachloroethylene	0	157	151	104

*% Recovery = $\frac{(SSR - SR)}{(SA)} \times 100$

Princeton Testing Laboratory
U.S. Route 1
Princeton Service Center
(609) 452-9050
P.O. Box 3108, Princeton, N.J. 08540

QUALITY CONTROL REPORT

Matrix Spike Analysis

JOB NO 38179
ANALYST JG
DATE 6-24-85
MATRIX MW
METHOD

COMPOUND Sample ID	COMPOUND NAME	Sample Result (SR)	Spiked Sample Result (SSR)	Spike Added (SA)	% Recovery*
60	Methylene chloride	2.0	59	74	77
	1,1-Dichloroethylene	ND	43	55	78
	1,1-Dichloroethane	ND	50	60	83
	1,2-Dichloroethylene	ND	51	61	84
	Chloroform	ND	53	72	73
	1,2-Dichloroethane	ND	60	78	77
	1,1,1-Trichloroethylene	ND	51	54	95
	Carbon Tetrachloride	ND	56	57	99
	1,2-Dichloropropane	ND	49	65	75
	Trichloroethylene	ND	47	55	85
	Tetrachloroethylene	ND	63	62	101
	Chlorobenzene	ND	40	47	85
	Benzene	ND	49	65	76
	Ethylbenzene	ND	48	54	89
	Toluene	ND	51	61	84
	m-xylene	ND	58	64	90
	p-xylene	ND	40	44	91
	m-Dichlorobenzene	ND	71	75	94
	p-Dichlorobenzene	ND	47	49	96

*% Recovery = $\frac{(SSR - SR)}{(SA)} \times 100$

G.2 ASSAGAI RESULTS

TO: Fred Hart
Attn: Dennis Farlor
525 5th Ave.
New York, NY 10036

DATE: 26 April 1985
0473

ANALYTE	SAMPLE ID/ ANALYTICAL RESULTS			
	DWA-1 4/18/85	DWB-1 4/18/85	DWA-2 4/18/85	SW-2 4/18/85
As	<0.05 mg/l	<0.05 mg/l	<0.05 mg/l	<0.05 mg/l
Ba	<1.0 mg/l	<1.0 mg/l	<1.0 mg/l	<1.0 mg/l
Cd	<0.010 mg/l	<0.010 mg/l	<0.010 mg/l	<0.010 mg/l
Cr	<0.05 mg/l	<0.05 mg/l	<0.05 mg/l	<0.05 mg/l
Hg	<0.002 mg/l	<0.002 mg/l	<0.002 mg/l	<0.002 mg/l
Pb	<0.050 mg/l	<0.050 mg/l	<0.050 mg/l	<0.050 mg/l
Se	<0.010 mg/l	<0.010 mg/l	<0.010 mg/l	<0.010 mg/l
Ag	<0.05 mg/l	<0.05 mg/l	<0.05 mg/l	<0.05 mg/l
Ignitability	>60 °C	>60 °C	>60 °C	>60 °C
	SW-3 4/18/85	SW-4 4/18/85	SW-7 4/18/85	SW-8 4/18/85
As	<0.05 mg/l	<0.05 mg/l	<0.05 mg/l	<0.05 mg/l
Ba	<1.0 mg/l	<1.0 mg/l	<1.0 mg/l	<1.0 mg/l
Cd	<0.010 mg/l	<0.010 mg/l	<0.010 mg/l	<0.010 mg/l
Cr	<0.05 mg/l	<0.05 mg/l	<0.05 mg/l	<0.05 mg/l
Hg	<0.002 mg/l	<0.002 mg/l	<0.002 mg/l	<0.002 mg/l
Pb	<0.050 mg/l	<0.050 mg/l	<0.050 mg/l	<0.050 mg/l
Se	<0.010 mg/l	<0.010 mg/l	<0.010 mg/l	<0.010 mg/l
Ag	<0.05 mg/l	<0.05 mg/l	<0.05 mg/l	<0.05 mg/l
Ignitability	>60 °C	>60 °C	>60 °C	>60 °C

TO: Fred Hart
Attn: Dennis Farlor
525 5th Ave.
New York, NY 10036

DATE: 26 April 1985
0473

ANALYTE	SAMPLE ID/ ANALYTICAL RESULTS TB-14C 4/18/85	NOMINAL DETECTION LIMITS
As	<0.05 mg/l	0.05 mg/l
Ba	<1.0 mg/l	1.0 mg/l
Cd	<0.010 mg/l	0.010 mg/l
Cr	<0.05 mg/l	0.05 mg/l
Hg	<0.002 mg/l	0.002 mg/l
Pb	<0.050 mg/l	0.050 mg/l
Se	<0.010 mg/l	0.010 mg/l
Ag	<0.05 mg/l	0.05 mg/l
Ignitability	>60 °C	

REFERENCE: "Standard Methods for Examination of Water and Wastewater", 15th Edition, APHA, N.Y., 1980.

An invoice for services is enclosed. Thank you for contacting Assaigai Laboratories.

Sincerely,

Jennifer V. Smith

Jennifer V. Smith, Ph.D.
Laboratory Director

TO: Fred Hart
Attn: Dennis Farlor
525 5th Ave.
New York, NY 10036

DATE: 18 April 1985
0445

SAMPLE ID: DWB-1

ANALYTE	ANALYTICAL RESULTS	NOMINAL DETECTION LIMIT
TOC	7.2 mg/l	0.01 mg/l
TOX	<0.01 mg/l	0.01 mg/l

REFERENCE: "Standard Methods for the Examination of Water and Wastewater", 15th Edition, APHA, N.Y., 1980.

An invoice for services is enclosed. Thank you for contacting Assaigai Laboratories.

Sincerely,

Jennifer V. Smith

Jennifer V. Smith, Ph.D.
Laboratory Director

7300 Jefferson N.E. • Albuquerque New Mexico 87109 • 505 [illegible]

TO: Fred Hart
Attn: Dennis Farlor
525 5th Ave.
New York, NY 10036

DATE: 18 April 1985
0462

SAMPLE ID: CV-1

ANALYTE	ANALYTICAL RESULTS	NOMINAL DETECTION LIMIT
CN	<0.01 mg/l	0.01 mg/l
pH	8.05	0.01
EC	22,100 umhos/cm	0.1 umhos/cm

This sample identified as potassium chromate.

REFERENCE: "Standard Methods for the Examination of Water and Wastewater", 15th Edition, APHA, N.Y., 1980.

An invoice for services is enclosed. Thank you for contacting Assaigai Laboratories.

Sincerely,

Jennifer V. Smith

Jennifer V. Smith, Ph.D.
Laboratory Director

7300 Jefferson N.E. • Albuquerque New Mexico 87109 • 505-345-8964

TO: Fred Hart
Attn: Dennis Farlor
525 5th Ave.
New York, NY 10036

DATE: 24 April 1985
0477

SAMPLE ID: SW-2

ANALYTE	ANALYTICAL RESULTS	NOMINAL DETECTION LIMIT
TOX	<0.01 mg/l	0.01 mg/l
TOC	8.5 mg/l	0.1 mg/l

REFERENCE: "Standard Methods for the Examination of Water and Wastewater", 15th Edition, APHA, N.Y., 1980.

An invoice for services is enclosed. Thank you for contacting Assaigai Laboratories.

Sincerely,

Jennifer V. Smith

Jennifer V. Smith, Ph.D.
Laboratory Director

7300 Jefferson NE • Albuquerque New Mexico 87109 • [illegible]

TO: Fred Hart
Attn: Dennis Farlor
525 5th Ave.
New York, NY 10036

DATE: 24 April 1985
0477

SAMPLE ID: ~~SW-2~~ SW-4

ANALYTE	ANALYTICAL RESULTS	NOMINAL DETECTION LIMIT
TOX	<0.01 mg/l	0.01 mg/l
TOC	7.2 mg/l	0.1 mg/l

REFERENCE: "Standard Methods for the Examination of Water and Wastewater", 15th Edition, APHA, N.Y., 1980.

An invoice for services is enclosed. Thank you for contacting Assaigai Laboratories.

Sincerely,

Jennifer V. Smith

Jennifer V. Smith, Ph.D.
Laboratory Director

7300 Jefferson N.E. • Albuquerque New Mexico 87109 • 505 345-8964

TO: Fred Hart
Attn: Dennis Farlor
525 5th Ave.
New York, NY 10036

DATE: 24 April 1985
0477

SAMPLE ID: SW-7

ANALYTE	ANALYTICAL RESULTS	NOMINAL DETECTION LIMIT
TOX	<0.01 mg/l	0.01 mg/l
TOC	9.6 mg/l	0.1 mg/l

REFERENCE: "Standard Methods for the Examination of Water and Wastewater", 15th Edition, APHA, N.Y., 1980.

An invoice for services is enclosed. Thank you for contacting Assaigai Laboratories.

Sincerely,

Jennifer V. Smith

Jennifer V. Smith, Ph.D.
Laboratory Director

7300 Jefferson NE • Albuquerque New Mexico 87109 • 505 345-8964

TO: Fred Hart
Attn: Dennis Farlor
525 5th Ave.
New York, NY 10036

DATE: 24 April 1985
0477

SAMPLE ID: SW-8

ANALYTE	ANALYTICAL RESULTS	NOMINAL DETECTION LIMIT
TOX	<0.01 mg/l	0.01 mg/l
TOC	10.4 mg/l	0.1 mg/l

REFERENCE: "Standard Methods for the Examination of Water and Wastewater", 15th Edition, APHA, N.Y., 1980.

An invoice for services is enclosed. Thank you for contacting Assaigai Laboratories.

Sincerely,

Jennifer V. Smith

Jennifer V. Smith, Ph.D.
Laboratory Director

7300 Jefferson NE • Albuquerque New Mexico 87109 • 505 345-8964

APPENDIX H

REFERENCES

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James O. Brown

Fields of Competence

Geologic sample collection, identification and presentation; water sample collection for chemical analysis; recording of subsurface electrical resistivity; organic vapor analysis (OVA); and installation and monitoring of groundwater wells.

Education

B.A., Geology, Rutger's University, 1979
M.S., Geology, Oregon State University, 1982

Key Projects

- Supervised test boring and installation of NJPDES monitoring wells in a multiple aquifer system at a New Jerey solid waste landfill.
- Assisted in the preparation and outline of tasks to identify site conditions and potential contaminant migration of a multiple aquifer system at a former military operations site in the western U.S.
- Assisted in sampling program to identify site conditions and potential hazards at a major industrial site under consideration for purchase by client.
- Assisted in well installation on offshore drill rigs for petroleum exploration.
- Supervised drill rig operations and assisted in field reconnaissance for exploration of precious minerals in the Basin and Range Province.
- Interpretation of geology of glacial deposits in Ohio and New York, of Coastal Plain sediments in New Jersey, of floodplain alluvium deposits in West Virginia and semi-arid alluvium deposits in New Mexico.

Training

March 1985 - Environmental Protection Agency. One-week course in Hazardous Materials Incident Response Operations.

Professional Affiliations

The Paleontological Society
The New York Paleontological Society

Publications

Kendall, G.W.; Johnson, J.G.; Brown, J.O.; Klapper, G.; 1983, Stratigraphy and Facies Across Lower Devonian--Middle Devonian Boundary, Central Nevada, American Association of Petroleum Geologists Bulletin, V. 67, No. 12, p. 2199-2207.

(68D/1-2)

Dennis Farley

Fields of Competence

Hazardous waste site investigation and sampling methodologies, groundwater contamination monitoring and assessment, monitoring well design and installation.

Experience Summary

Two years experience as a hydrogeologist conducting hazardous waste site investigations and remedial action plans. Duties have involved all phases of project management including work plan development, subcontracting, field supervision, sampling, data reduction, and report preparation. Performed work at 17 National Priority List (Superfund) sites.

Education

B.S., Geology/Physics, Moravian College, 1982

Key Projects

- Coordinated field efforts and sampling methodologies for a major dioxin sampling project at the top priority Superfund site in 1983.
- Coordinated field efforts and sampling methodologies for a source characterization study at a low level radiation Superfund site. Supervised drilling of over 200 boreholes and the installation of 16 monitoring wells.
- Performed hydrological pathways investigations at several Superfund sites in New York State. These investigations involved the development of groundwater monitoring programs and the design and installation of monitoring wells.
- Conducted preliminary assessments and site investigations at potential hazardous waste sites for the purpose of ranking on the USEPA's Hazard Ranking System.
- Was a member of the Regional Level "A" Emergency Response Team (1983 and 1984) while employed with a consultant to the U.S. Environmental Protection Agency. Have worked with all levels of respiratory and personal protection.

Professional Affiliations

National Water Well Association
Associate Member American Institute of Professional Geologists

Prior Firms

NUS Corp., Edison, N.J.

(68G/2)

Jill F. Greenberg

Fields of Competence

Toxicology of environmental and occupational contaminants; health and safety procedures.

Experience Summary

Four years of experience in reviewing, assessing and disseminating to the public and private sectors information on chemical substances regarding their chemical properties and toxicity; evaluation of epidemiologic data on animal and human carcinogens; preparation of public outreach programs.

Education

B.S., Biological Sciences - State University of New York-Binghamton, 1977

M.P.H. Candidate, Environmental Sciences - Columbia University School of Public Health

Key Projects

- Assisted in a study of chemical exposures in the auto repair industry in the greater Metropolitan New York area. Developed a comprehensive manual for education purposes.
- Completion of a nationwide review of state and local regulations pertaining to access to data on chemical composition and hazardous materials.
- Aided in the development of a new research technique and methodology for integrated pest management using the enzyme-lined immunosorbent assay.
- Served as an editor and writer for a national health publication, which focused on critical issues in the area of environmental and occupational health, with analyses of its effect on health policy.
- Aided in the preparation of reports for public dissemination concerning availability of epidemiologic data on humans exposed to animal carcinogens and other toxic substances, such as arsenic, 1,3-butadiene and ethylene dibromide.
- Developed an extensive plan of remedial action for homeowners concerned about health effects from exposure to chlordane and Dursban, pesticides used by commercial applicators for termite eradication.

- Coordinator and moderator of a seminar series for community organizations that provided scientific and technical information in areas of environmental and health policy. Responsible for overall evaluation of project and preparation of proceedings for publication.

Professional Affiliations

American Public Health Association
Graduate Women in Science (AAAS)
Scientists Institute for Public Information

Publications

Karstadt, M., and Greenberg, J. Access to Data on Chemical Composition of Products Used in Auto Repair and Body Shops: Resurvey of Product Marketers (1985). (In preparation).

Karstadt, M., and Greenberg, J. Access to Data on Chemical Composition of Products Used in Workplaces: Impact of the New York State Worker Right to Know Law (1985). (In preparation).

Greenberg, J. 1982. The Fight for Safety and Health at the Workplace. Consumer Health Perspectives. Volume VIII, No. 6. New York.

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Langridge, W.H.R., Granados, R.R. and Greenberg, J.F. Journal of General Virology. 1981. Volume 54, pp. 443-448. Detection of Baculovirus Protein in Cell Culture and Insect Larvae by Enzyme-linked Immunosorbent Assay (ELISA).

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(87W/1-2)

James P. Mack

Fields of Competence

Geology, hydrogeology, water resources evaluation, groundwater monitoring programs, geophysical surveys, groundwater characterization, environmental impact statements and permits, groundwater remediation.

Experience Summary

Five years of hydrogeological experience including design of groundwater monitoring systems, hazardous waste site investigations, application of hazard ranking models, preparation of RCRA compliance plans including monitoring, maintenance, and contingency plans, and spill response plans.

Education

B.S., Geology - Waynesburg College, 1974
M.S., Geology - Adelphi University, 1980

Key Projects

- Conducted and supervised Phase II confirmation studies for the Air Forces' Installation Restoration Program (IRP). This involved developing scopes of work, estimating costs, coordinating subcontractors, supervising field work, preparing draft and final reports and attending meetings.

- Conducted hydrogeologic investigations of landfills and soil contamination problems in Ohio, West Virginia and Connecticut.

- Prepared a draft Corrective Actions Permit Writers Manual for EPA. Manual specified techniques EPA permit writer could use to evaluate the effectiveness of proposed groundwater cleanup programs.

- Participated in the design of a groundwater monitoring system for a major hazardous waste disposal site near Niagara Falls, New York. Because of the unique characteristics of the hydrogeologic environment, a new design was developed for monitoring wells.

- Conducted extensive hydrogeologic field investigations at a hazardous waste disposal site near Baltimore, Maryland, including drilling of test borings, installation of monitoring wells, natural gamma logging, aquifer tests, groundwater flow analysis and an estimate of potential impacts.

- Prepared an off-site spill response plan for a hazardous waste processing facility near Chicago, Illinois. Included coordinating site personnel, contacting local emergency response agencies and establishing a sequence of procedure for corporate personnel in the event of a spill.

- Participated in several Initial Assessment Studies for the U.S. Navy. He has prepared water resources, soils and geology sections for IASs for the Indian Head Naval Ordnance Station; Earl Naval Weapons Station; Patuxent River Naval Air Station, Mechanicsburg Ships Parts Control Centerthe Davisville Construction Battalion Center. Collected available published and file reports, conducted interviews with appropriate personnel, evaluated potential groundwater and surface water impacts from identified disposal areas, and ranked designated sites according to the Navy ranking model.

- Prepared earth and water resources sections for major environmental impact statements on 201 Facilities Plans for large river basins in the Northeast and Puerto Rico. This work included an evaluation of the potential effects expanded suburban development may have on regional groundwater quality and quantity. Characterized existing hydrogeologic conditions, prepared hydrologic budgets, delineated productive aquifers, safe yield determinations and identified aquifer recharge areas.

- Performed a hydrogeological analysis of a proposed hazardous waste disposal site (for PCB's) in the Upper Hudson region of New York. This included an evaluation of the site for compliance with New York State and Federal Hazardous Waste Disposal Regulations, suitability of the leachate collection system and adequacy of the groundwater monitoring plan.

Professional Affiliations

National Water Well Associations

Publications

Mr. Mack prepared Earth & Water Resources sections for the following studies:

Environmental Impact Statement on the 201 Facilities Plan for the Upper Passaic River Basin in New Jersey.

Environmental Impact Statement on the 201 Facilities Plan for the Upper Rockaway River Basin, New Jersey.

Environmental Impact Statement on the 201 Facilities Plan for the Lajas Valley, in Puerto Rico.

Environmental Impact Statement on the 201 Facilities Plan for the Upper Hudson-Lake George Region in New York.

Environmental Impact Statement on the Dredging and Upland Disposal of PCB Laden River Bed Sediments in the Upper Hudson, Fort Edwards, New York.

"Potential Groundwater Contamination from Development at Various Densities at Elwood, New York", Town of Huntington, Department of Environmental Protection, Huntington, New York.

"Environmental Impact Statement on the Imperial Gardens Subdivision with special reference to Anticipated Groundwater Contamination, Commack, New York". Town of Huntington, Department of Environmental Protection, Huntington, New York.

"Monitoring, Maintenance and Contingency Plan for SCA Chemical Services, Inc. Model City, New York"

"Off-Site Spill Emergency Response Plan for SCA Chemical Services Chicago Facility"

"Phase 1 Field Investigations and Risk Assessment of the Solley Road Site"

Hydrogeology Assessment of the Laurel Park Landfill, Naugatuck, CT

IAS Study, Naval Ordnance Station, Indian Head, Maryland

IAS Study, Naval Weapons Station, Earl, New Jersey

IAS Study, Naval Air Station, Patuxent River, Maryland

IAS Study, Ships Parts Conctrol Center, Mechanicsburg, Pennsylvania

IAS Study, Construction Battalion Center, Davisville, Rhode Island

Development of a Comprehensive Groundwater Monitoring System to Meet Federal and State Requirements

Evaluating RCRA Corrective Actions Program

Investigation and Corrective Action: How It Was Done at a Superfund Site in Connecticut

(79CC/1-3)

Bruce E. Mackie

Fields of Competence

Groundwater monitoring and investigation, well design and installation, land reclamation, geophysical investigation, well logging and gas chromatograph analysis.

Experience Summary

Five years varied geologic and hydrogeologic experience, including well-site geology involving lithoigic identification, hydrocarbon evaluation and geophysical analysis, hydrogeologic evaluation of municipal sanitary landfills, evaluation of abandoned mine lands for compliance with federal and state mining laws and hydrogeologic field investigations and groundwater monitoring at six Superfund sites.

Education

B.A., Geology - Susquehanna University, 1978
M.S. Candidate - Hydrogeology, Susquehana University

Key Projects

- Project Manager for statewide abandoned mine lands inventory in Pennsylvania, including mine drainage analysis, identification of health and safety hazards, compliance monitoring and reclamation studies involving reclamation alternatives and cost-benefit analysis.

- Design of maintenance and monitoring contingency plans for hazardous waste landfill to comply with RCRA regulations for PCB storage.

- Field Leader of feasibility study for municipal sanitary landfill involving field analysis of geologic and hydrogeologic condition, receptor impact and compliance with NJPDES permit regulations.

- Investigation of industrial solvent spill involving determining extent of contamination, implementing monitoring systems and instituting recovery programs.

- Well-site geologist for ten petroleum exploration wells involving lithologic identification, stratigraphic correlation, core analysis, gas chromatograph evaluation, selection of packer seats and core sampling locations and Electric Log geophysical investigation.

- Field supervision of quarterly groundwater sampling programs for priority pollutants at both Superfund and non-hazardous waste sites.

- Preparation of work plans and site operations plans for Superfund sites in Missouri and New Jersey.

- Monitoring of EPA Region III Field Investigation Team (FIT) at Pennsylvania Superfund site for compliance with safety and sampling protocols.

- Field experience includes site work under USEPA Levels B, C, and D for personnel respiratory/cutaneous protection.

(87L/1-2)

Jose Luis Vega
Field Technician/Draftsman

Jose Luis Vega is a Field Technician and Draftsman with over two years experience at Fred C. Hart Associates, Inc. As a former member of the Region II Field Investigation Team, Mr. Vega has assisted in investigations of over 20 hazardous waste sites, including 5 designated Superfund sites. He has sampled soil, sediment, biota and surface water for potential contamination. He has conducted priority pollutant and EP toxicity studies. He is experienced in the use of Self-Contained Breathing Apparatus (SCBA) and trained in precautionary sampling measures.

Mr. Vega also assists in the graphics department, creating paste-ups, layouts, and illustrations. He devises formats for charts, maps, proposals and publications used by the firm.

Mr. Vega holds a drafting degree, has college experience and maintains an aviation A&P license.

(79J/1)

THOMAS R. VETRANO

Fields of Competence

Solid and hazardous waste management, industrial hygiene and toxicology, municipal and industrial wastewater treatment, and hazardous waste site remediation/mitigation.

Education

B.S., Environmental Science, cum laude, Cook College, Rutgers University, 1982.
M.S., Environmental Engineering/Toxicology, New Jersey Institute of Technology, 1984.

Key Projects

- Responsible for the management and production of a revised Part B Permit application for a Chemical Waste Management facility in Braintree, MA. Permitted processes included incineration, container storage, tank storage, wastewater treatment and solvent recovery. Work included supervision and review of all revisions necessary to meet NOD items, development of project workplans and schedules, and reformatting of the application to meet RCRA and State requirements.

- Development of a revised Part B Permit application for the CWM-Model City facility. Work included NOD responses, revision of technical areas of the document and reformatting to conform to RCRA standards.

- Development of recommended guidelines for hospital infectious and pathological waste management, transport, and disposal, involving a comprehensive review of all applicable regulations and inspection and review of potential disposal contractors.

- Managed the preparation of a RCRA Part B Permit application for container storage of hazardous waste at a military installation.

- Assisted in the development of RCRA Part B permit applications for a waste oil recovery facility and a chemical management/processing facility and weapons storage depot.

- Assisted in the development of a RCRA Part B permit application for an aqueous hazardous waste treatment facility. Work included development of conceptual design plans for facility expansion and aboveground storage for ignitable wastes; design of flood prevention barriers and area drains; and development of contingency plan and tank inspection and closure procedures.

- Assisted in the evaluation and design of a remedial action and closure plan for a hazardous waste landfill in Pennsylvania.

- Design of a leachate analysis and management plan, including treatment options designed to meet discharge requirements, for an operating solid waste landfill in New Jersey.

- Preparation and outline of tasks designed to identify site conditions and potential hazards involved with a closed hazardous waste treatment and disposal facility, aimed at reducing the potential liability of a major industrial client.

- Developed toxicity and health risk assessments for contaminants found in soil and groundwater samples at a plastics production facility and an abandoned hazardous waste disposal site. Work included identification of acute and chronic health risks and migration potential for 25 organic compounds and metals.

- Preparation of an Endangerment Assessment for a Superfund site in Missouri. Work included development of aquatic endangerment estimates, health risks to human receptors, and review of suggested remedial alternatives.

- Research and design of original experimental protocols investigating the hypertensive effects of chronic asymptomatic lead poisoning in animals.

- Design of an environmental monitoring program, including air pollution monitoring, waste analysis, and performance auditing, for a 2,000 ton/day municipal resource recovery incinerator.

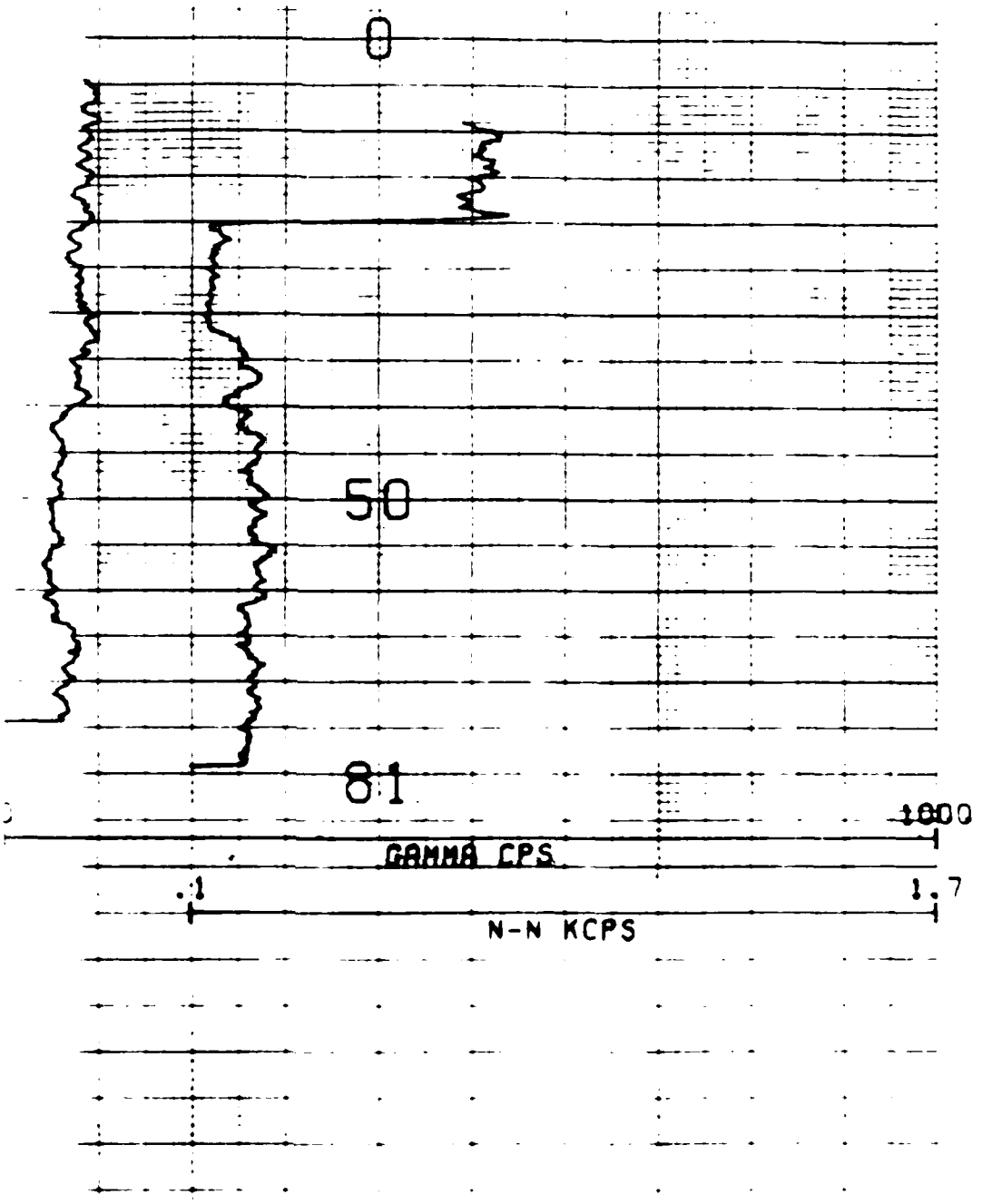
Publications

"The effect of chronic, low level lead ingestion on blood pressure in young dogs" Journal of Laboratory and Clinical Medicine (pending).

(87K/1,2)

APPENDIX J

GEOPHYSICAL LOGS



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FRED C. HART & ASSOC

G.E. PLANT 4, SC.

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PROBE # 0056R — 244

SENSOR 04 CAL STD CPS = 152

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FRED C. HART & ASSOC
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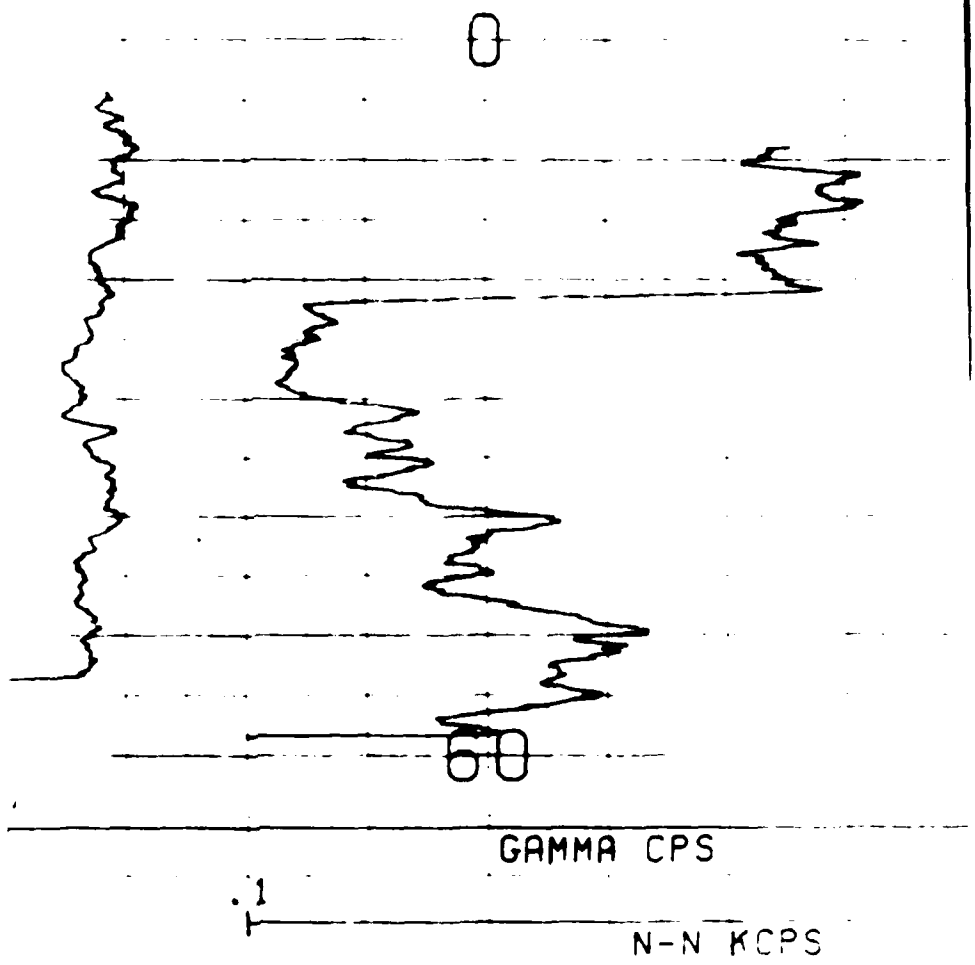

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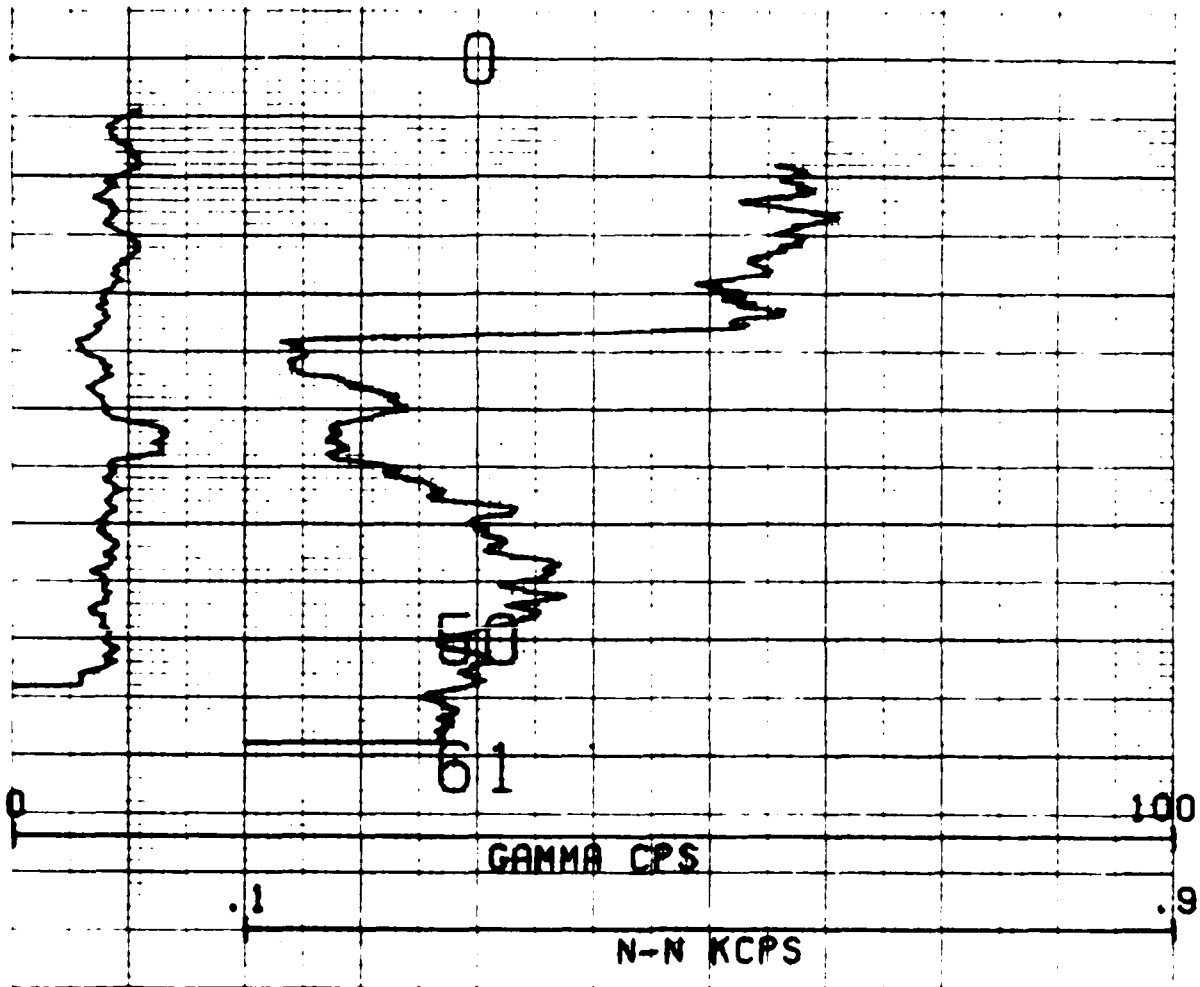
FRED C. HART & ASSOC

N.E. PLANT ALBQ.



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DWB-2

FRED C. HART & ASSOC

G.E. PLANT ALBQ.

HOLE DIAMETER : 06.0

PROBE # 8055A - 244

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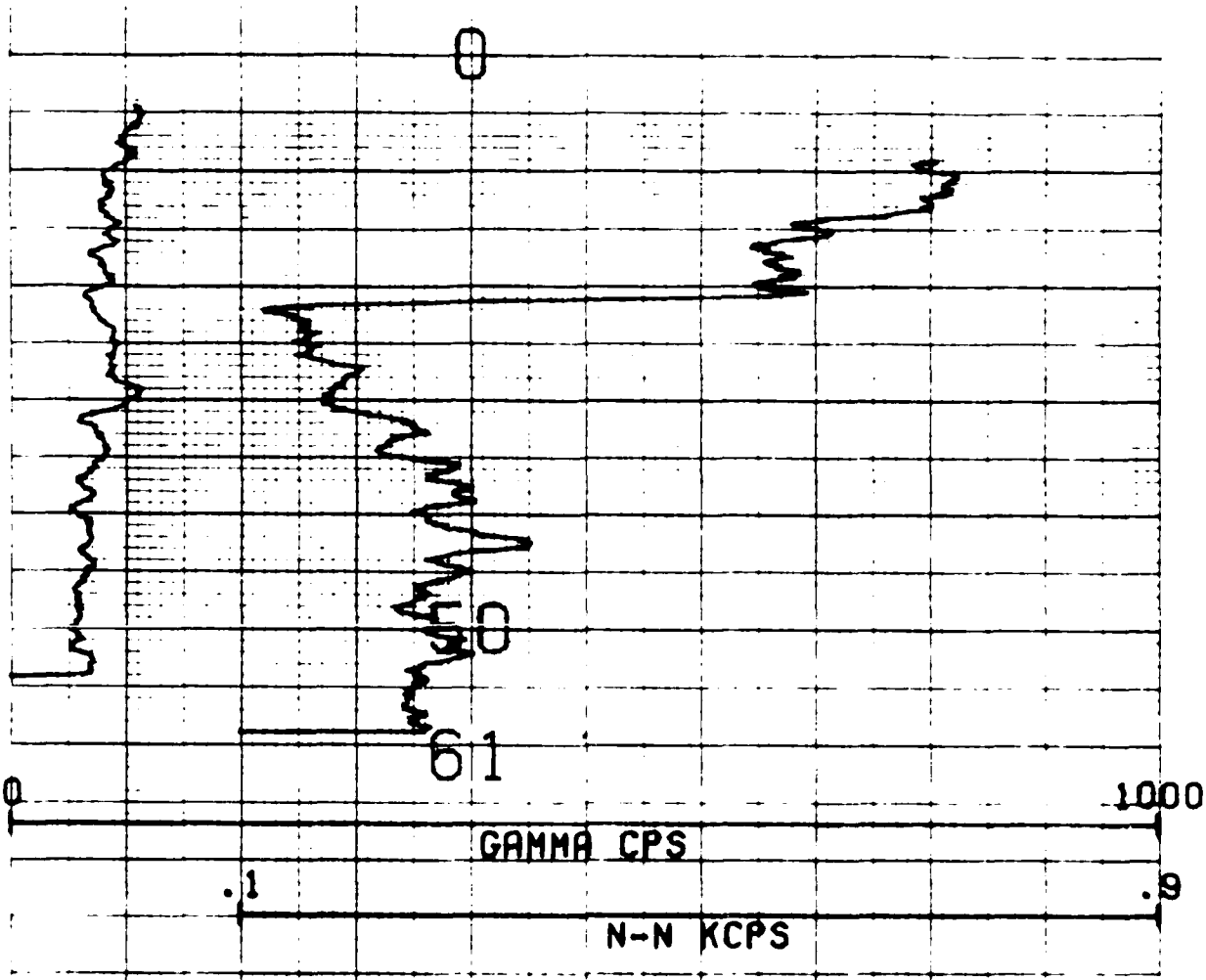
61



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COMPU-LOG VOL2 PLOT 04-30-85

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FRED C. HART & ASSOC

G.E. PLANT ALBQ.

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PROBE # 0055A - 244

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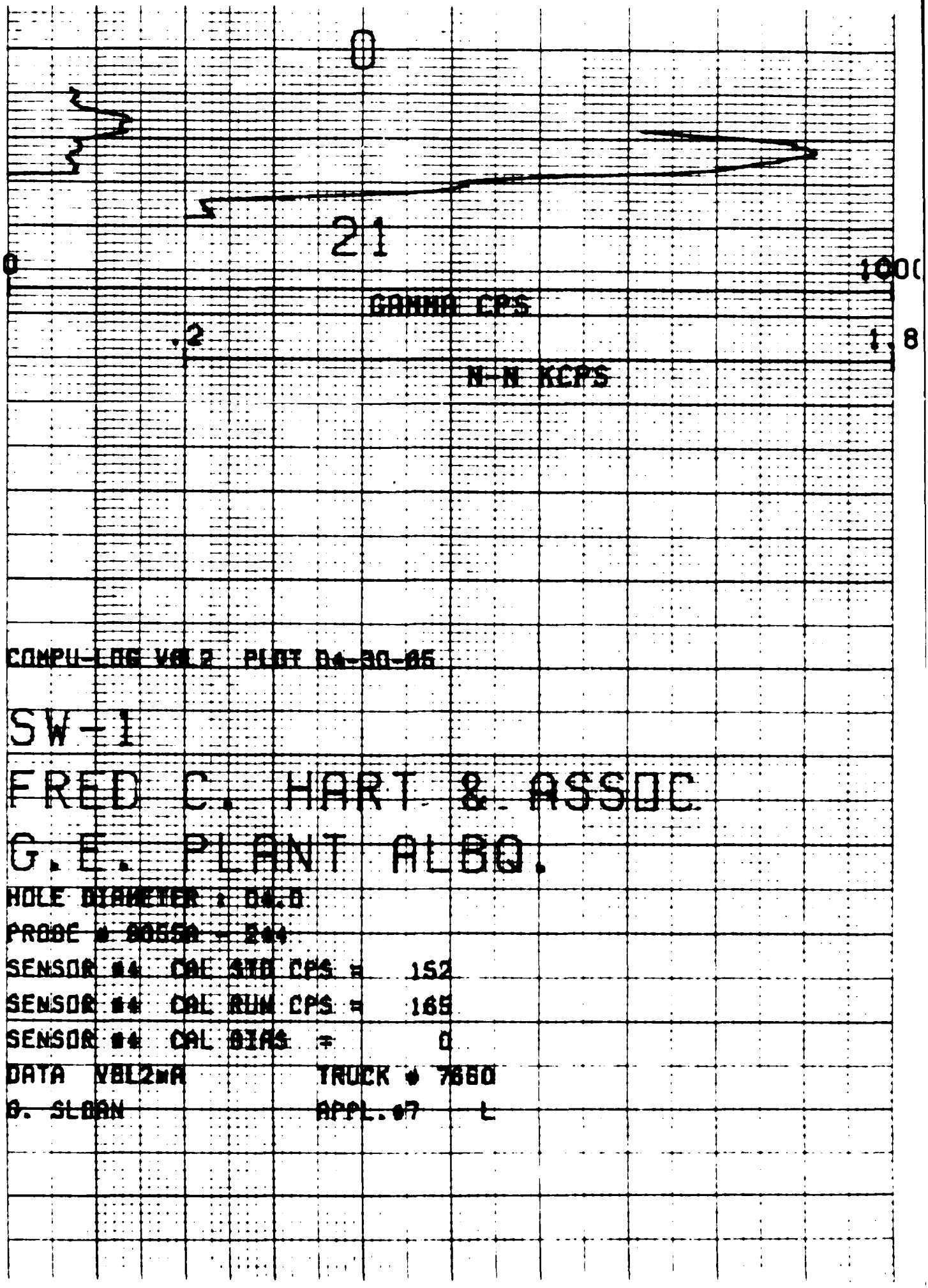
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SENSOR #4 CAL BIAS = 0
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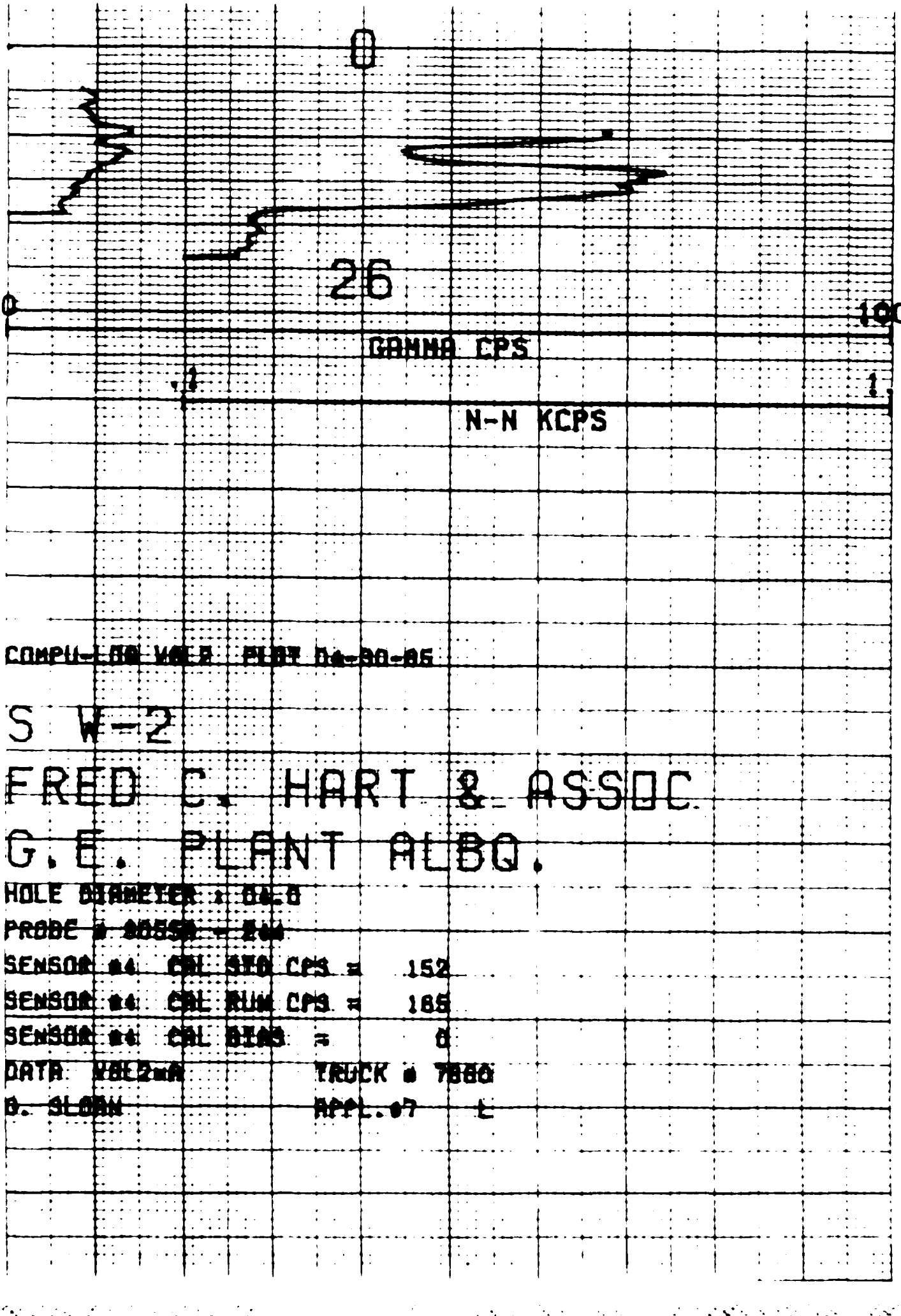
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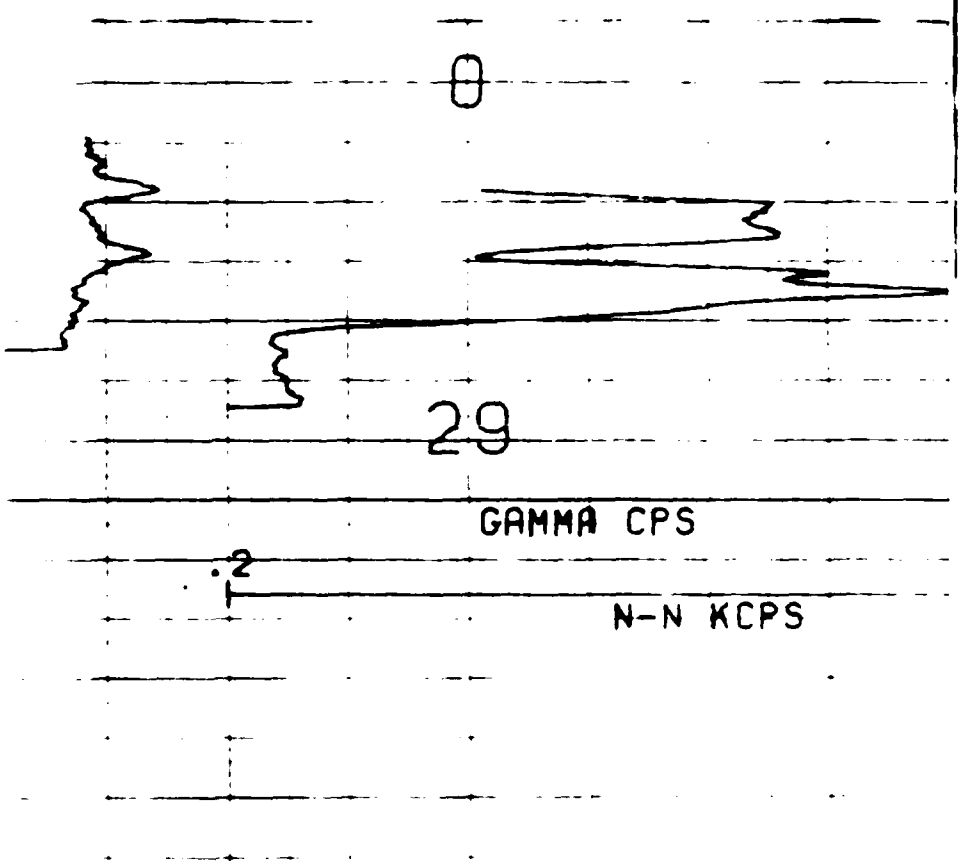

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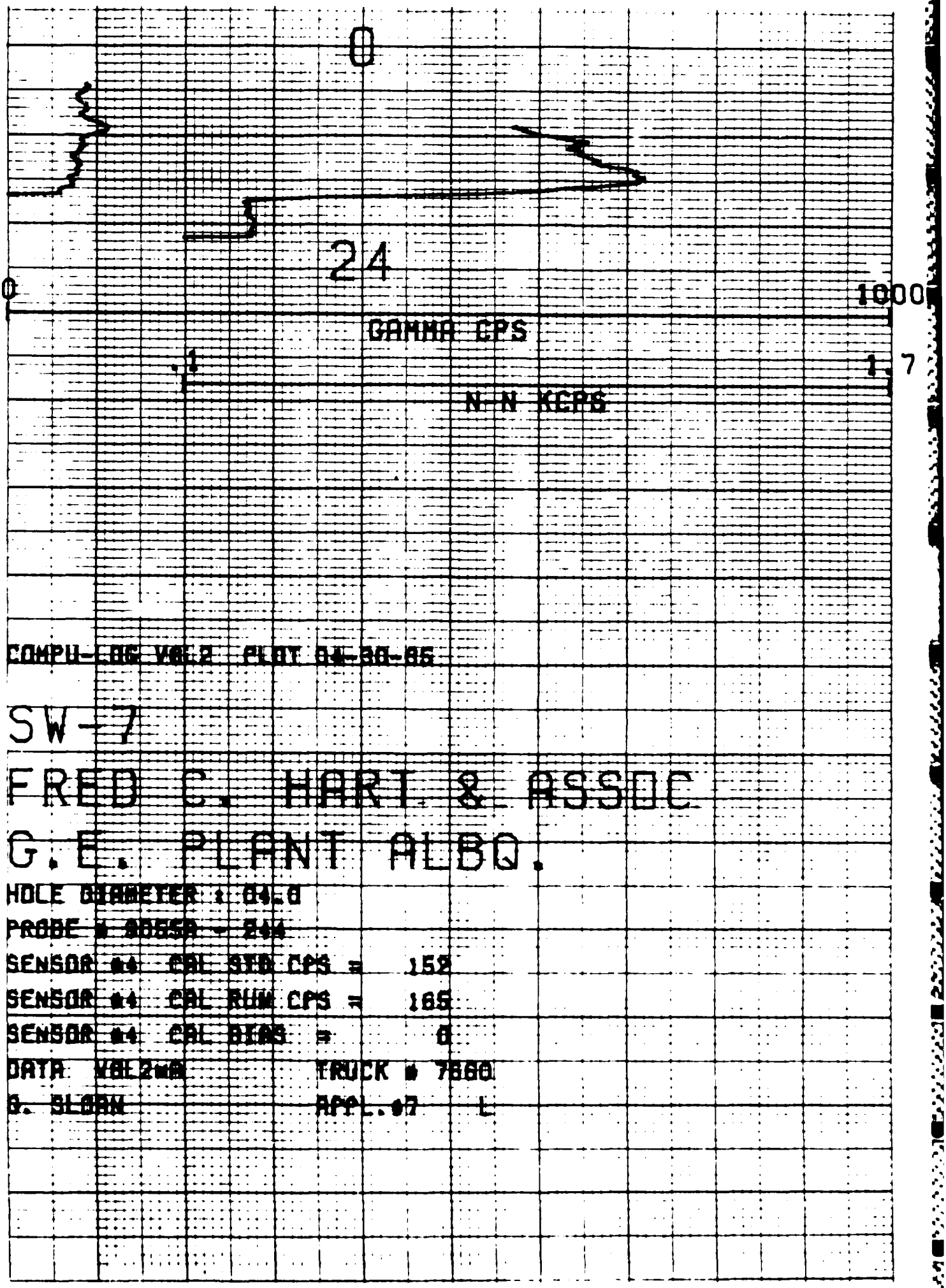
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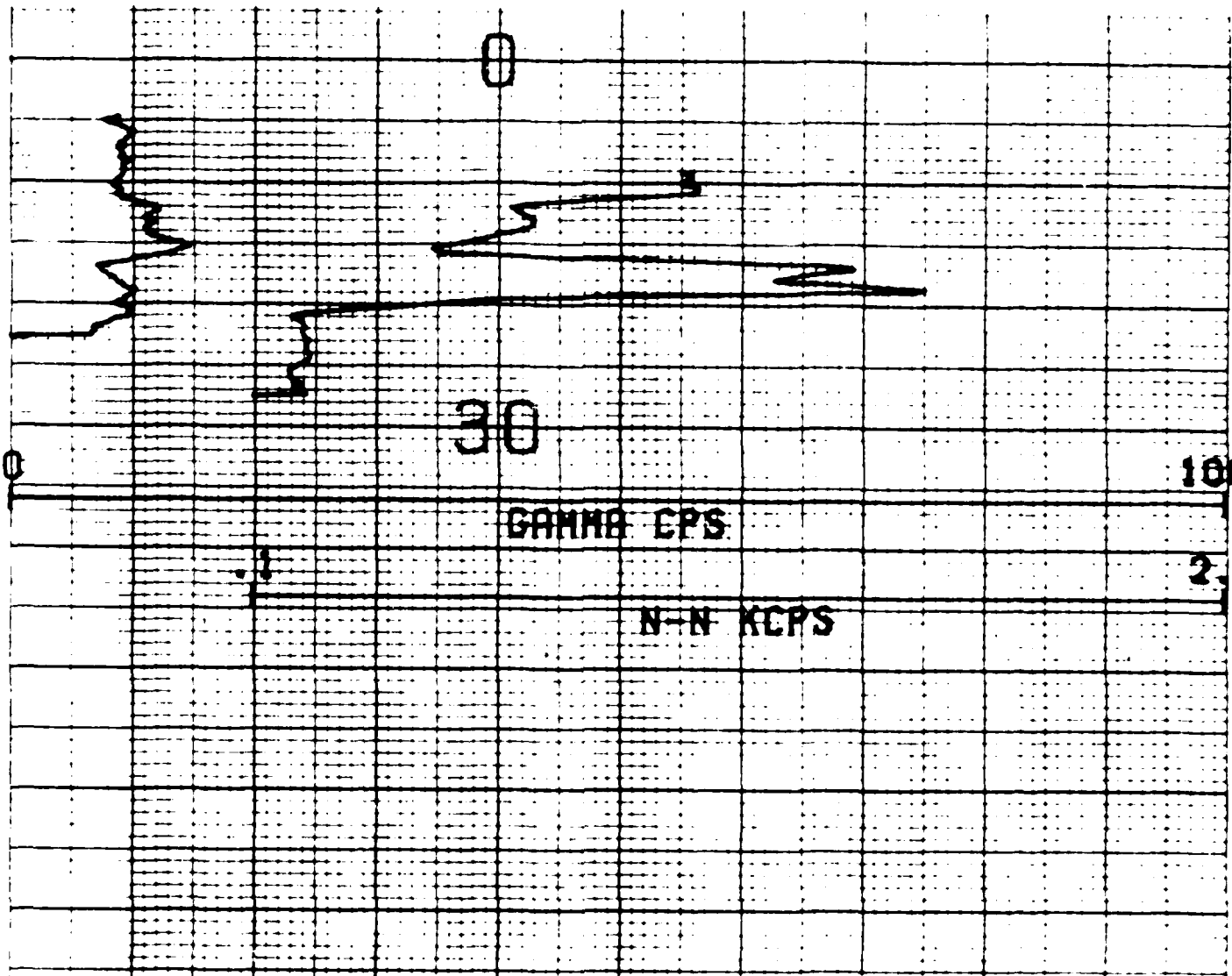

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COMPU-LOG V6L2 PLOT 04-30-85

SW-8

FRED C. HART & ASSOC

G. E. PLANT ALBQ.

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PROBE # 0065A - 244

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SENSOR #4 CAL RUN CPS = 165

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B. SLOAN APPL.#7 L

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APPENDIX K

TECHNICAL OPERATIONS PLAN AND SAFETY PLAN

FIELD INVESTIGATION TEAM
HEALTH AND SAFETY PLAN

A. GENERAL INFORMATION

SITE AT SE Plant 83 PROJECT NO.: G104

LOCATION 336 Woodward Road, SE; Albuquerque, NM

PREPARED BY Francie Barker DATE: 3/4/85

APPROVED BY David Lipsky, PhD. DATE: 3/5/85

OBJECTIVE(S) Conduct sampling for remedial investigation to identify extent and magnitude of contaminated soil, sediment and groundwater

PROPOSED DATE(S) OF INVESTIGATION: March, April, May and June 1985

BACKGROUND REVIEW COMPLETE: X PRELIMINARY: ____

DOCUMENTATION/SUMMARY: OVERALL HAZARD:

SERIOUS	____
MODERATE	____
LOW	X
UNKNOWN	____

B. SITE/WASTE CHARACTERISTICS

WASTE TYPE(S) LIQUID X SOLID ____ SLUDGE ____ GAS ____

CHARACTERISTIC(S): CORROSIVE ____ IGNITABLE X RADIOACTIVE ____

VOLATILE X TOXIC X REACTIVE ____ UNKNOWN ____ OTHER (NAME): ____

FACILITY DESCRIPTION: Facility manufactures metal and plastic aircraft engine parts. Storage of some hazardous substances for manufacturing use.

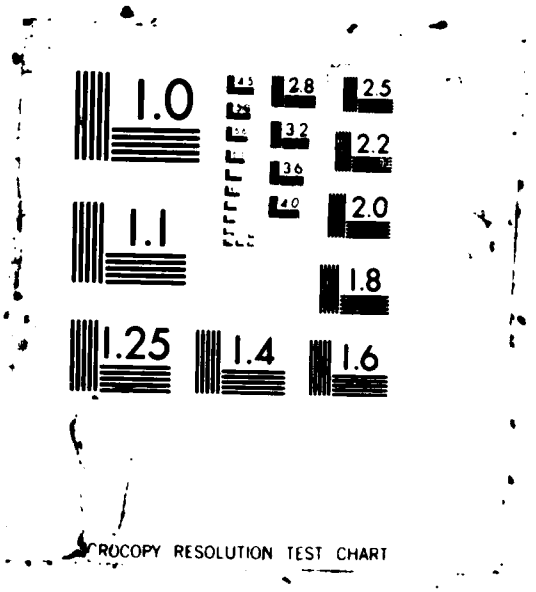
PRINCIPAL DISPOSAL METHOD (type and location): Storage of hazardous waste for off-site disposal by contractors.

UNUSUAL FEATURES (dike integrity, power lines, terrain, etc.) Located in light and heavy industrial area; near oil storage facilities.

STATUS (active, inactive, unknown): Active

HISTORY (worker or nonworker injury; compliants from public; previous agency action): Part of the South Valley area declared a Superfund site by EPA due to contamination of municipal groundwater wells.

AD-A170 420 INSTALLATION RESTORATION PROGRAM PHASE II 3/3
CONFIRMATION/QUANTIFICATION STA..(U) HART (FRED C)
ASSOCIATES INC NEW YORK SEP 86 F33615-84-D-4404
UNCLASSIFIED F/G 13/2 NL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ROCOPY RESOLUTION TEST CHART

C. HAZARD EVALUATION

Hydrogeologic investigation of soils and sediments for possible contamination with trace levels of paints, chromate and spend methyl ethyl ketone from Adhesive primer, potassium hydroxide, inorganic alkaline cleaner, alkaline cleaner turco sur, waste, aluminetch #2, Sodium nitrate, nitric nitradd nickel etch waste, freon TF, and 1,1,1-trichloroethane. Water sampling for potential groundwater contamination. Soil sampling at one location for potential cyanide waste contamination.

D. SITE SAFETY WORK PLAN

PERIMETER ESTABLISHMENT: MAP/SKETCH ATTACHED YES SITE SECURED? YES

PERIMETER IDENTIFIED YES ZONE(S) IF CONTAINMENT IDENTIFIED Unknown

PERSONNEL PROTECTION

LEVEL OF PROTECTION: A ____ B ____ C ____ D X (modified)

MODIFICATIONS: During drilling: upgrade to Level C (MSA GMA-H combination cartidges) if organic vapors less than 1000 ppm are detected and sustained, Level B above 1000 ppm. Excavation & sampling of potential cyanide contaminated soil will be conducted Level C and monitored with draeger tubes. cyanide vault sampling Level B.

SURVEILLANCE EQUIPMENT AND MATERIALS: Organic Vapor Analyzer, draeger tubes

DECONTAMINATION PROCEDURES: Washing boots and gloves with detergent and water, rinsing with clean water; steam cleaning of drilling equipment, separate decon area will be established for steam cleaning.

SPECIAL EQUIPMENT, FACILITIES, OR PROCEDURES: Decon waste will be drummed and screened for contamination.

SITE ENTRY PROCEDURES: Not applicable

TEAM MEMBER (Major)	RESPONSIBILITY
Jim Mack	Project Director
Dennis Farley	Field Team Leader/QA/QC/Site Safety
Jim Brown	Hydrogeologist/Well Installation
Phil Watts	Hydrogeologist/Well Installation
Jose Vega	Technician/Sampling

WORK LIMITATIONS (time of day, etc.): Daylight Hours

INVESTIGATION-DERIVED MATERIAL DISPOSAL: Disposable clothes and equipment to be drummed and disposed if contamination detected. Waste groundwater and decon waste will be screened for contamination. If contaminated, waste will be drummed and disposed off-site.

E. EMERGENCY INFORMATION

LOCAL RESOURCES

AMBULANCE: (505) 765-1100 or 911

HOSPITAL EMERGENCY ROOM:(848-8142

POISON CONTROL CENTER: (505) 843-2441

POLICE: (505) 766-7700

FIRE DEPARTMENT: (505) 243-6601

AIRPORT: (505) 842-4366

EXPLOSIVES UNIT: N/A

EPA CONTACT: To be arranged

SITE RESOURCES

WATER SUPPLY: At GE Plant

TELEPHONE: (505) 765-9521

RADIO: N/A

OTHER: N/A

EMERGENCY CONTACTS

FCHA	Jim Mack	(212) 840-3990
	Rick Dorrler	(212) 840-3990
USAF	Col. R.C. Wooton	(800) 821-4528
GE	Laura J. Mixon	(505) 765-9521
EPA		

F. EMERGENCY ROUTES

(give road or other directions; attach map)

HOSPITAL: St Joseph's Hospital, 400 Walter at Grand, Northeast

OTHER: N/A

END

4-87

DTIC